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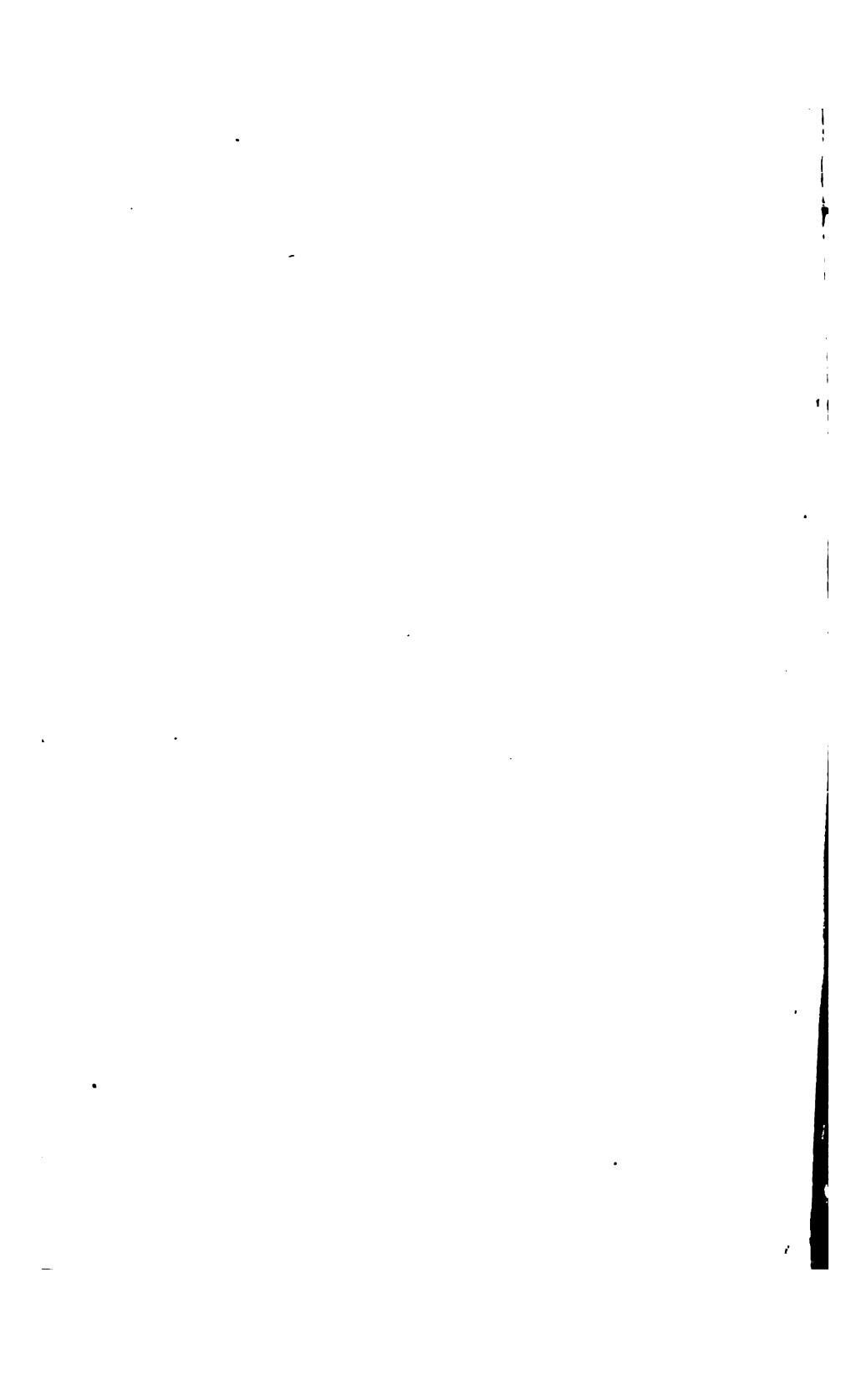
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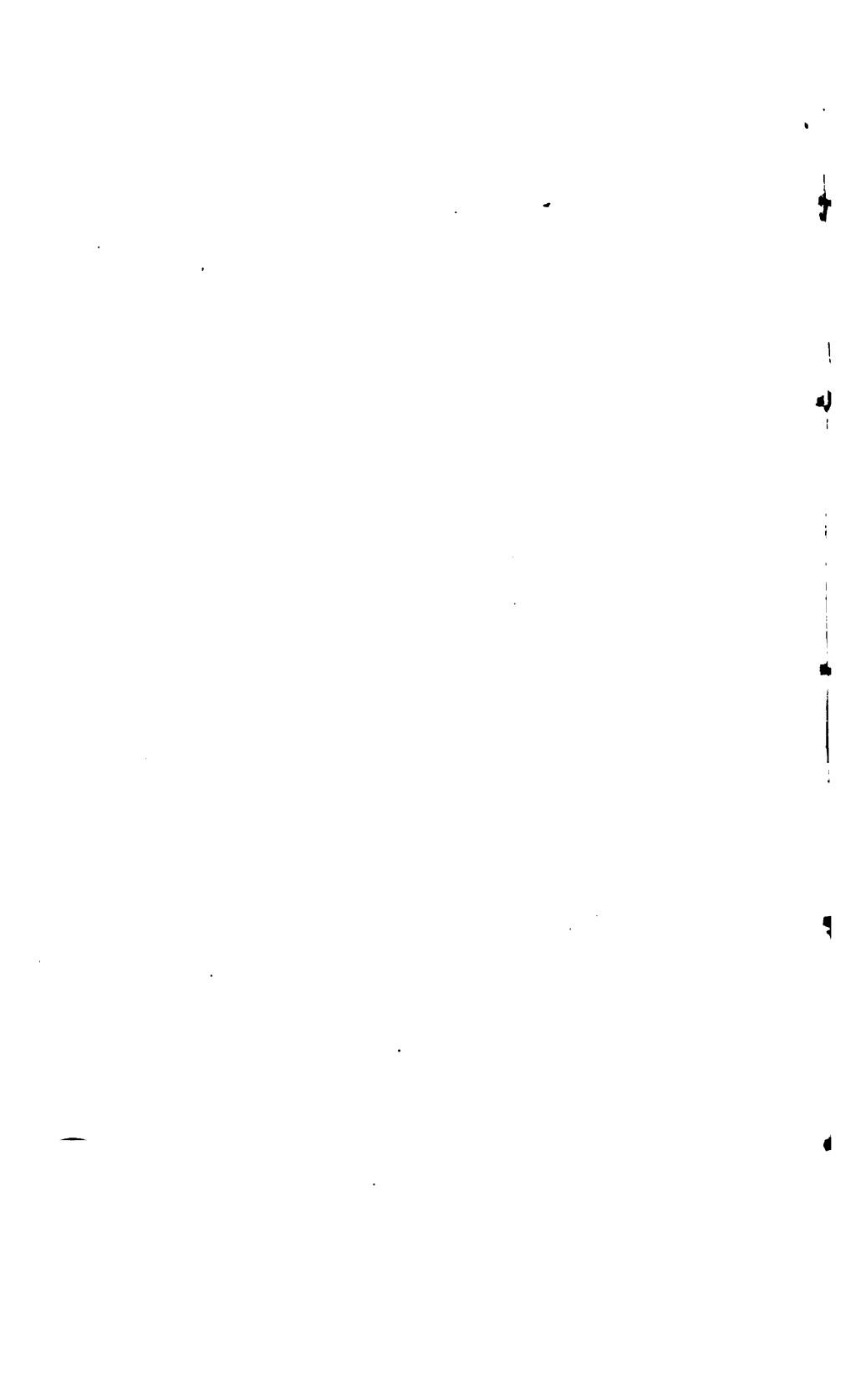


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**INDUSTRIES AND WEALTH
OF NATIONS**



INDUSTRIES AND WEALTH OF NATIONS

BY

MICHAEL G. MULHALL

FELLOW OF THE ROYAL STATISTICAL SOCIETY; MEMBER OF THE

COMMITTEE OF THE BRITISH ASSOCIATION

AUTHOR OF "THE DICTIONARY OF STATISTICS"

"Agriculture, Manufactures, and Commerce are the springs
of national wealth."—*ChaptaL*

"Wealth consists of nothing else than an abundance of
those commodities that minister to the wants of human life."
—*Dupin.*

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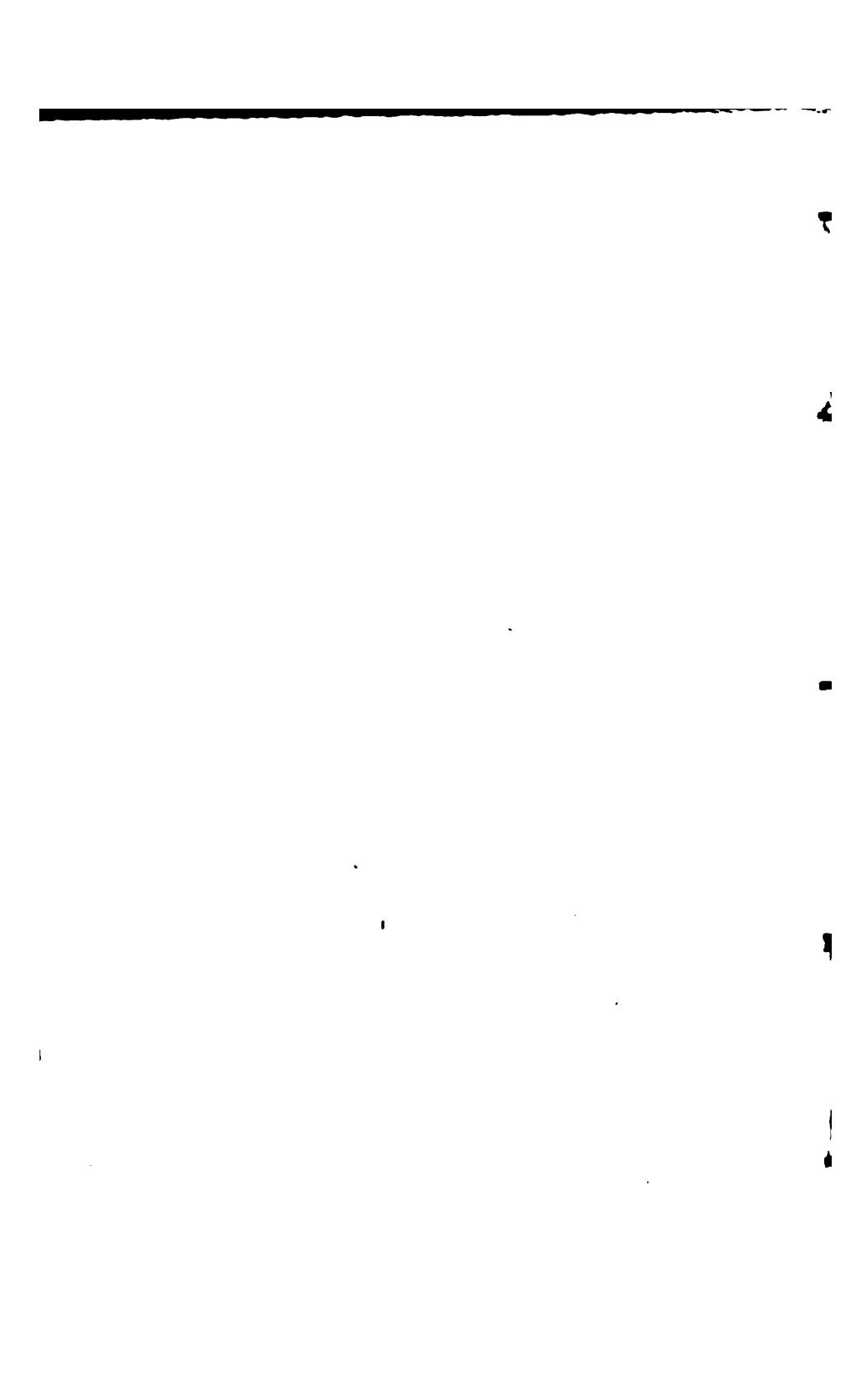
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BY

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P R E F A C E

THERE is nothing original in the present work, which simply brings into a narrow compass the result of the labours of hundreds of able writers, whose works are not accessible to the general public. The conviction that this task could have been better accomplished by someone else has not deterred me from taking it in hand; and the years that I have devoted to it, let me hope, may prove to have been as useful as they have been to me delightful. Shakespeare says, "No profit goes wherein no pleasure's ta'en."

The public and the Press have heretofore treated me with such kindness that I feel profoundly grateful.

MICHAEL G. MULHALL.

KILLINNEY, DUBLIN,
August 15, 1896.

"The principal value of Statistics is for purposes of comparison, and they must often cover the debateable ground between ascertained facts and reasonable conjecture."—Jevons.

"We must avoid the absurdity of limiting Statistics to ascertained facts, for in many cases this branch of science can reach only approximate results."—*Leroy-Beaulieu.*



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ERRATUM.

The earnings of Australia are incorrectly stated at page 51 ;
correctly at page 346.

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INDUSTRIES AND WEALTH OF NATIONS

ERRATUM

Page 264, third line from foot of page,
instead of " £16 " read " £164."

Wealth of Nations.

, ~ . ~~the work~~ might not be better done if undertaken collectively by three or four European Governments, each appointing a Commissioner for the purpose, and the Commissioners holding session for two years in succession at Paris and London. If they were to work harmoniously, the result of their labours would be of the highest value, but it is possible that some points of discord might arise and render their labours nugatory.

The field of inquiry is vast, since it embraces two generations, for the object is not merely to arrive at the earnings and wealth of nations in the final decade of the nineteenth century, but also to trace the growth of industries during the last sixty years. It is no less important to compare the wealth of Great Britain at present with that of France or the United

A

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States, than to ascertain what progress we have made since the days of Porter and M'Culloch. Nor would it be possible to estimate correctly the earnings of a nation unless we were first to gauge their various industries. These depend on population, energy, means of transport and other factors, all which, in like manner, call for consideration. The plan, therefore, of the present work may best be explained by passing in review the items of which it is made up.

1. *Population*.—Without population there can be no wealth. The immense territories watered by the Amazon are not at present worth sixpence an acre, because they are untenanted : on the other hand the little island of Barbadoes, although inhabited by negroes, is most valuable. Perhaps the most striking illustration in this way is the State of Colorado, which was a desert until 1858, when a group of 200 persons settled there : the census of that State in 1890 showed property to the value of 239 millions sterling, all created in thirty-two years. It has been estimated by Dr. Farr, that a man aged 20, as an element, or rather a creator of wealth, is worth, in a new country, £234, and Engel estimates him at £200. In effect it will be seen that there has been a rapid accumulation of wealth in the United States and the British Colonies, where a great influx of immigrants took place, of working-age, that is, between the ages of 15 and 60. In most countries the ratio of persons of working-age, male and female, is about 60 per cent. of the population.

2. *Energy*.—This is the working-power of a nation, consisting of many kinds, such as human beings, horses, oxen, wind, water, steam, and electricity. Human energy is by common consent fixed at 300 foot-tons daily for a man, 200 for a woman, 100 for a child between 10 and 16 years of age. For all practical purposes we may omit women and children, the first being usually occupied in domestic cares, the second seldom employed in the business of life. Human energy, counting only men up to 60, will be found in most countries equivalent to 90 foot-tons daily per head of the whole popula-

INTRODUCTION

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tion. The working-power of a horse, according to Smeaton and others, is about 5000 foot-tons daily, but the agricultural statistics of countries include horses of all ages, for which reason we cannot take the average working-power higher than 3000 tons, or equal to that of ten men. Mules are in all cases counted as horses, but no account is taken of asses. French economists sometimes compute the power of oxen, which in certain countries are used for ploughing and other rural labours, but they are not used in Great Britain and other leading countries, and hence for purposes of comparison must be omitted. It is unfortunately necessary to exclude windmills, since their number or power in various countries is unknown, but the omission is, after all, of little importance, as they are going out of fashion everywhere except in Holland, where there are still 9000, used mostly for pumping. Water-power offers the same difficulty as windmills, since there are but scanty returns as to its use in factories. The United States census for 1880 showed 55,000 water-wheels, with a collective force of 1,225,000 horse-power, an increase of 8 per cent. since 1870 : if we suppose a like increase in the ensuing decade, the force of water-wheels in 1890 would be 1,320,000 horse-power. The exclusion of this element of energy makes the following difference in the United States :—

	Million Foot-Tons Daily.	Foot-Tons per Inhabitant.
Including water	183,980	1,920
Excluding water	128,700	1,850

The exclusion of water reduces the apparent working-power of the American people by no more than 4 per cent. In Switzerland water is relatively of more importance, the last census showing water-wheels with an aggregate of 120,000 horse-power, or 17 per cent. of the energy of the nation. As regards other countries water plays an insignificant rôle. The new force of electricity has not yet been measured, but its use increases every day, and it threatens before long to supplant steam.

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3. *Steam.*—This item of energy calls for separate notice, representing as it does more than half the working-power of the world. It is of three kinds: fixed engines, locomotives, and steamboats, the aggregate last year amounting to 55 million horse-power. Each unit of horse-power is considered equal to 4000 foot-tons daily, or one-third more than a living horse, because steam never tires, never suffers from sickness, and is therefore able to accomplish more than the same number of horses. The latest general statement of fixed engines is that made by Engel in 1878, but the principal countries have published much later returns: where such do not exist we may go on the hypothesis that the increase of fixed engines since 1878 has been in the same ratio as that of the consumption of raw material, or that of the number of factory operatives. The power of locomotives, in all but mountainous countries, ranges from 250 to 350 horse: in Switzerland it is 420. Whenever it is impossible to ascertain the number or force of locomotives in any country, a safe estimate will be 80 horse-power for every lineal mile of railway, or else one horse of steam to every 50 miles run in the year by locomotives. The third kind of steam-power is that used in shipping. If we were to take merely the nominal power of the engines, it would be so far below the reality as to mislead. A vessel of 1000 nominal horse-power may often be found to have engines that possess double or treble that force. When Engel made his statement in 1878, he gave to British steamers a horse-power equal to three-fourths of their registered tonnage: in the present work the power and registered tonnage are supposed to be numerically equal; that is, a steamer of 3000 tons is counted as 3000 horse-power. As vessels of war have no direct bearing on trade or the creation of wealth, their steam-power is not included.

4. *Employment of Energy.*—It is well to distinguish in the various countries the amount of energy expended in production, from what is employed for transport or distribution. The plan followed is this: we count as productive energy that

which is human, the whole power of fixed engines, and half that of horses; distributive energy, therefore, includes the other half of horses, and all the power of railway locomotives and steamboats. It will be seen hereafter that distributive energy has in the last fifty years increased three times faster than productive, causing a remarkable reduction in the cost of transport, but for which the increase of production would have been much less than it has been, as it would not have been profitable to produce many things at the freight charges of former years.

5. *Agriculture.*—This is the chief occupation of mankind, employing 49 per cent. of the working population of nations, the number of hands in Europe alone exceeding 86 millions. It comprises both tillage and pastoral pursuits. The principal points of comparison are, the area under crops, the weight of grain produced, the number of hands, the food-supply of all kinds, the amount of capital represented by farms, and the annual value of products. Some points deserve particularly to be remembered. The quantity of grain produced is not wholly available for food, a deduction of 10 per cent. being necessary to provide for seed. Not quite half the grain produced is used for human sustenance, and hence it occurs that a country like France may raise 20 bushels of grain per inhabitant and yet be obliged every year to import largely. In order to compare the production of food in the various countries it will be necessary to reduce all kinds to the common denominator of bushels of wheat, for which purpose the following is a convenient formula:—4 tons of flour or malt equal to 5 of wheat or barley; 3 tons of potatoes to 1 of wheat; 100 gallons of wine to 1 ton of wheat; and 1 of meat to 8 of wheat. As regards the production of meat, the slaughter and the weight of carcase are variously estimated in different countries, but it may be taken as a general rule that 1000 live cattle will give yearly 50 tons of meat, 1000 sheep 10 tons, and 1000 pigs 40 tons, the usual slaughter being 20 per cent. of cattle, 30 of sheep, and 90 of pigs. In the

United Kingdom the product per thousand head is fully 10 per cent. more than the foregoing general formula, Major Craigie's estimate being as high as 67 tons of beef and 12½ of mutton. In countries like Spain, where goats are numerous, their meat is included with mutton, on the basis of 3 tons per thousand living goats. Importations of live cattle are estimated at the rate of 750 lbs. each for oxen and 90 lbs. for sheep. Tables of meat-supply in the present work do not include fowl, game, &c., owing to the difficulty of arriving at the annual consumption. Some chicken-farmers assert that Great Britain consumes 80 million home-grown fowl yearly, besides what is imported: altogether, the consumption of fowl and game in this country may reach 5 lbs. yearly per inhabitant. Dairy products were for some years the subject of angry discussion, but it seems now to be admitted that cows give 350 gallons of milk yearly, that 6000 gallons make a ton of butter, or 2200 a ton of cheese. Dairy products range from £6 per cow yearly in some countries to £12 in others. As regards the annual value of farm products, estimates have been made from time to time in all countries of Europe and in the United States: in some cases, however, only crops have been considered, to the exclusion of pastoral products; in others the value of grain has been set down, and that of straw omitted. In the estimates of agricultural wealth it will be seen in the ensuing pages that sundries (including implements) are allowed for as 9 per cent. of the total, which cannot be considered excessive, seeing that Chaptal allowed 14 per cent.

6. *Forestry*.—Some writers include forest products among agricultural, because many farmers are also wood-cutters, but it is better to regard it as a distinct branch of industry. It appears to give constant occupation to at least 4 millions of men, the average weight of timber cut being close on 3 million tons daily, and representing a value of £800,000. About two-thirds are used for firewood, and only one-third is timber properly so called. If the value of forest products were in-

cluded with agriculture it would disturb the ratio of yearly product per acre devoted to farming.

7. *Fisheries.*—The harvest of the seas varies from $2\frac{1}{2}$ to 3 million tons of fish yearly, and the average take of each fisherman rarely passes 4 tons. In fact the number of hands does not reach a million, and the annual product of their labours is about 39 millions sterling. It is, therefore, relatively, a very small industry.

8. *Textile Manufactures.*—This is the foremost among manufactures, occupying $5\frac{1}{2}$ million operatives, who turn out goods to the value of about £2,700,000 daily. M'Culloch estimated the output at three times the value of raw material consumed, but improved machinery has so far reduced the cost of production, that at present the ratio between raw material and manufactured goods is as 10 to 33. Cotton and wool have long competed for supremacy; at present cotton is ahead, standing for 35, while wool is only 32, per cent, of the total value of textile manufactures.

9. *Hardware.*—This term in the present work excludes stone, &c., and is applied only to metallic industries, comprising every kind of manufactures in which iron, copper, lead, or other metal forms a principal component, such as rails, arms, cutlery, implements, machinery, steamboats, &c. It has been often said in England that any attempt to estimate the output of this branch of industry would be illusory, but such is not the case. We know the quantity and value of iron, steel, and copper goods exported, as well as the weight of metal retained for home manufacture and consumption. The official value of steel manufactures exported from Great Britain in 1894 was £26, 10s. per ton: we may be permitted to put down iron manufactures at half that price. On this basis the manufactures of iron and steel in the United Kingdom in 1894 will be found to sum up a value of 116 millions sterling. As regards copper, lead, and tin, the manufactured output may be taken, as M'Culloch would have it, at three times the value of metal consumed. The total hardware industries of

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the United Kingdom would thus amount to 142 millions sterling, equal to an annual output of £114 per operative, according to the number engaged in this branch of industry at the census of 1891.

10. *Leather*.—The production of leather in each country depends more or less on the number of live-stock. A hide weighing 100 lbs. will produce 60 lbs. of leather, and the weight of hides produced yearly compared with the number of living animals will be found as follows:—1000 cattle, 5 tons; 1000 sheep, $1\frac{1}{2}$ ton; 1000 pigs, 3 tons; 1000 horses, 1 ton. When the total yield is ascertained, a deduction of 10 per cent. should be made for what is lost or used on farms. Tanned leather has a normal value of £170 per ton: boots, shoes, saddlery, &c., are worth over £500 a ton. In most countries boots and shoes constitute half the value of leather manufactures.

11. *Clothing*.—The value of clothing produced in any country will be found to be about 75 per cent. of that of textile manufactures retained for home use, and this formula is adopted in the present work as regards all countries.

12. *Food Manufactures*.—These consist mainly of flour, beer, sugar, &c. We have accurate returns as to France, Russia, and Belgium, but incomplete as to other countries, and in their case such manufactures may be put down at one-third of the value of food consumed.

13. *Houses and Furniture*.—The value of houses built and furniture made yearly in the United Kingdom, as will be shown hereafter, is about 3 per cent. on the existing value of all houses and furniture. The same formula may be applied to other countries, there being no other means to arrive approximately at the annual product of these two industries.

14. *Small Manufactures*.—There are a hundred small industries in every country that come under none of the preceding heads, and they may in every case be put down as 20 per cent. of the annual manufacturing output of a nation.

15. *Mining*.—This includes, besides subterranean work, all

gold-washings, salt-pans, stone and slate quarries, and similar works above ground. The value is taken at the pit's mouth, except as regards precious metals, gold being worth £140,000 per ton, silver valued at the current price in the London market. Mining is an important industry, employing 3,100,000 men, who raise 2½ million tons of stuff daily.

16. *Transport.*—The carrying-trade of the world may be considered under three heads: 1st, shipping; 2nd, railways; 3rd, highroads and canals. No fewer than 8½ million men are employed in this calling—that is to say, there is one carrier for twenty-three men engaged in other industries. The weight of goods moved daily appears to exceed 10 million tons, each carrier moving twenty times his own weight. It will be seen, later on, that carriers' earnings average almost £4,000,000 daily, or 9 shillings a man, but this must not be confounded with the wages paid them; earnings, of course, include the gross receipts of railways and shipping. Carriers' capital is enormous, and increases by more than 200 millions sterling per annum. If we consider the carriers' earnings of the United Kingdom, they seem to amount approximately to 169 millions sterling, viz. :-

By	Goods, £.	Passengers, £.	Total, £.
Rail . . .	47,800,000	36,500,000	84,300,000
Sea . . .	28,600,000	25,400,000	54,000,000
Highroad, &c. .	17,400,000	18,300,000	35,700,000
Total . . .	93,800,000	75,200,000	169,000,000

In the above table the railway returns are official, the earnings on sea are taken at £2 per ton of carrying-power, and those on highroads, &c., at £70 per carrier. Port-entries of the United Kingdom in 1894 were 95,200,000 tons; the sea-freight, therefore, as given in the above table was equal to 6 shillings per ton, including foreign and coasting trade. The earnings on highroads, &c., include £3,600,000 by tramways, £9,700,000 by cabs and coaches, and an allowance of 10 pence per ton for the use of carts in loading or discharging

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420 million tons of merchandise carried in 1894 by ship or rail. This total of 169 millions sterling is just double the earnings of the railways of the United Kingdom. It is, moreover, equivalent to a fixed toll of $10\frac{1}{2}$ per cent. on the value of the whole internal trade of the kingdom, and for this reason in the present work this formula is adopted regarding all countries. The shipping of various nations may be valued at £6 per ton of sailing vessels, and £15 per ton of steamers, including furniture, stores, machinery, &c.—the gross earnings at £2 per ton of carrying-power, which means the nominal tonnage of sailing-vessels and four times that of steamers. Railways have been already referred to in dealing with steam-power: it only remains to be added that they should in all cases be state-property, like the post-office or telegraph services, as they become a terrible monopoly in the hands of joint-stock companies.

17. *Commerce*.—By this is understood the interchange of merchandise between nations, exclusive of bullion. The weight of sea-borne merchandise may be considered identical with the tonnage of port-entries. It is true that 20 per cent. of all port-entries among nations, as shown hereafter, are in ballast, and that tonnage entries are often repeated, by reason of a vessel calling at two or three ports on the same voyage; but it is no less certain that cargo steamers usually carry more than their registered tonnage, and these circumstances balance one another.

18. *Internal Trade*.—This is much more important than external trade, and presents the best gauge of a nation's industry and prosperity. It comprises the value of all merchandise handled by the inhabitants; agricultural products, manufactures, minerals, forestry, fish, and the imports from other countries retained for consumption. The aggregate value of human industry—that is, of all products (excluding transport charges)—was in 1894 nearly 10 milliards sterling, that of goods interchanged between nations $1\frac{1}{2}$ milliard, from which it appears that nations consume at home 85 per cent.

of their products of every description, and barter 15 per cent. with their neighbours. In other words the products of industry average £31,000,000 daily, of which £26,400,000 are kept for home consumption and £4,600,000 exported. Each man in the great workshop of the world produces goods to the value of 36 pence daily : the food for himself and his family costs about 15 pence, the transport of himself and his products 5 pence, and the rest goes in clothing, house-rent, cattle-food, taxes, &c., except 4 pence which goes to accumulation of wealth.

19. *Banks and Money.*—The banking-power of a country may be said to consist of the paid-up capital of its banks, the deposits exclusive of savings-banks, and the amount of convertible paper money. With regard to money we can count only gold, silver, and convertible notes, the amount represented by nickel and copper being insignificant. Inconvertible notes, to use Leon Say's words, are dishonest money, and not to be counted.

20. *Earnings.*—To determine the annual earnings of a nation, take—

- Agricultural : 60 per cent. of gross annual product.
- Manufacturing : 50 per cent. of output of mills and artisans.
- Minerals, forestry, fisheries: total annual value produced.
- Commercial: 10 per cent. on aggregate internal trade.
- Transport: 10 $\frac{1}{2}$ per cent. on same.
- House-rent: 6 per cent. on value of houses.
- Domestic wages : two-thirds of house-rent.
- Public service: 50 per cent. of national revenue.
- Professions: 10 per cent. on sum of all preceding.

The above formula is followed throughout in the present work.

21. *Wealth.*—For the purpose of the present inquiry wealth is classified under ten headings. Land is capitalised at thirty times the annual assessed value. Cattle are taken usually at official estimate (except in the case of Austria) where such is found to exist. Farm implements, &c., are computed as 10

per cent. on the aggregate value of land and stock, thus forming 9 per cent. of farming capital. Houses are capitalised at $16\frac{1}{2}$ times the rental. Furniture, on the basis of London insurance, is estimated at 50 per cent. of the value of the house to which it belongs, and, moreover, includes pictures, books, jewellery, clothing, carriages, &c. Railways are put down at their cost of construction. Factories are valued at one-third of their annual output, this ratio being found to exist in France and the United States. Bullion estimates are according to the latest official statements. Merchandise comprises the aggregate value of all agricultural, manufacturing, mining, fishing, and forestry products, as well as imported goods, existing at any time in a country, which may be taken as 50 per cent. of the annual amount.¹ Sundries embrace all other components of wealth, and in the present work are estimated at 20 per cent. of the total, because in the case of France they form that ratio. In all cases, meantime, when Probate returns enable us to determine the exact amount of wealth, as in the United Kingdom, the item of Sundries will be found simply to express the balance unaccounted for or undefinable.

22. *Taxation.*—For greater clearness taxation must be considered from three points of view: first, the national revenue of a country; secondly, the amount levied yearly by taxation, excluding all public services; thirdly, the total burthen of taxes, general and local. In some countries the receipts from State railways constitute the largest item of revenue. In order to arrive at the amount of taxation we must exclude not only the earnings of State railways, but also those of the Post-Office, Crown lands, &c. The annual burthen borne by a nation consists of the collective amount of national and local taxes, and the incidence of same should be calculated in the ratio of taxation to earnings, instead of counting how many shillings per head of the population.

¹ The United States Census Commission has adopted 75 per cent.

23. *Debt.*—On this point a similar method as in taxes is to be followed: first, the nominal amount of national debt in a country; secondly, the debt after deduction of the value of State railways; thirdly, the burthen of real debt, national and local. The incidence of debt is to be computed not at so much per inhabitant, but in the ratio it bears to the wealth of the nation.

Note.—The whole scheme of the book is based on the tables in the Appendix, which will for this reason be found to elucidate the several subjects that are treated in succession. None but English weights and measures are employed. American money is reduced to the pound sterling at 4 dols. 80 cents, French at 25 francs, Austrian and Dutch at 12 florins or guilders, Russian at 10 roubles. A ton is always a long ton, that is, 2240 lbs. or 1000 kilogrammes. Acres are in all cases English statute acres, and grain is taken as 8 bushels to the quarter, 5 quarters or 40 bushels to the ton. A milliard signifies one thousand millions. For sake of brevity the Austro-Hungarian monarchy is termed Austria, and in a few cases the ancient title Scandinavia is used to comprehend Sweden, Norway, and Denmark. British Colonies¹ comprises only Canada and Australia, the rest being outside the scope of survey. Official returns are as a rule adopted, unless in a few cases where they are manifestly incorrect, but even then the official figure is given, subject to protest, as occurs in the cotton manufactures of Spain.

¹ The only exception is as regards population on page 14, where South Africa is included.

II

NATIONS OF CHRISTENDOM

THERE has never been a period of ancient or modern times wherein the population of civilised nations has increased so rapidly as in the last sixty-five years, that is about the length of an ordinary life-time, viz. :—

	1831.	1896.	Increase.	Per Cent.
United Kingdom	24,200,000	39,500,000	15,300,000	63
France	32,500,000	38,400,000	5,900,000	18
Germany	29,800,000	52,200,000	22,400,000	75
Russia	55,000,000	105,800,000	50,800,000	92
Austria	29,900,000	43,400,000	13,500,000	45
Italy	21,000,000	31,200,000	10,200,000	48
Other countries	36,000,000	58,500,000	22,500,000	62
Europe	228,400,000	369,000,000	140,600,000	62
United States	9,700,000	70,400,000	60,700,000	626
British Colonies	1,900,000	11,600,000	9,700,000	510
Total	240,000,000	451,000,000	211,000,000	88

So unprecedented a development of population was remarkable for three special circumstances. First, the emigration of 30 million Europeans to America and Australia; second, the influx of 10 millions of rural population into towns; third, the growing preponderance of the English language, now spoken by 120 million persons, as compared with 35 millions in 1831. If we inquire into the causes that impelled 40 millions of Europeans to break up their homes and either cross the seas or migrate into cities, we find that it was a social movement which may be said to date from 1848. The emancipation of serfs and the breaking up of noblemen's estates

in Prussia, Austria, Russia, and other countries, completely changed the face of Europe, placing the masses of the people in a much better position than before. Fifty years ago the Continent of Europe counted 100,000 nobles, 1,700,000 soldiers, 11 million persons living in towns, and 205 millions of rural peasantry, the last class for the most part in a state of bondage, ignorance, and destitution, not unlike that of the Helots in ancient Greece. The revolution of 1848, which shook every throne from the Mediterranean to the Baltic, and was accomplished without bloodshed, converted millions of serfs into freemen. At the same time the introduction of railways and of improved agricultural implements enabled the rural population to augment the product of their farms, to find markets everywhere, and to adopt a better standard of living. Steam multiplied the productive energy of nations; manufactures and commerce grew with amazing rapidity; and the condition of Europe underwent in a single generation a greater change than previous centuries had wrought. Men are now better housed, better fed, and better clad than before. The use of sawdust as an ingredient of bread is no longer heard of; corvée has been abolished; the schoolmaster is a prominent feature in the social world, and except for military service and the overcrowding of the poorer classes in large cities, the aspirations of Christian philanthropy have been in a great degree accomplished. Meantime the improved condition of the masses acted as a stimulus among the young and adventurous to seek their fortunes in new worlds, and thus we have seen in forty years no fewer than 25 million Europeans emigrate to America and the British Colonies, *viz.* —

From	1816-50.	1851-93.	Total.
United Kingdom . . .	2,369,000	8,601,000	10,970,000
Germany . . .	1,130,000	5,360,000	6,490,000
Italy . . .	820,000	4,020,000	4,840,000
Other countries . . .	1,177,000	8,693,000	9,870,000
Total . . .	4,996,000	26,674,000	31,670,000

16 *INDUSTRIES AND WEALTH OF NATIONS*

Of the emigration since 1851 the United States took 63, South America 13, the British Colonies 11, and other parts of the world 13 per cent., that is to say, the American Continent took $21\frac{1}{2}$ millions, leaving 5 millions to other parts. We see the result in the extraordinary development of industry and wealth in the United States, Canada, and some of the Spanish American Republics. Nevertheless, 90 per cent. of the American Continent is still uninhabited, and in many parts the traveller may go, for hundreds of miles, through lands of the richest fertility without seeing a house, a human being, or a head of cattle, although wood and water abound. If the present population of the Continent of Europe were transported to Spanish America the average would still be less than 22 inhabitants per square mile, which suffices to show that for centuries to come the western hemisphere will offer an almost unlimited field for the surplus population of the Old World.

The rapid growth of cities and towns in the last sixty years is no less true of the United States and Australia than of Europe: the number of cities over 50,000 souls has quadrupled since 1831, viz. :—

	Number of Cities.			
	Europe.	U. States.	Brit. Colonies.	Total.
1831	85	4	0	89
1861	148	16	4	168
1891	255	56	9	320

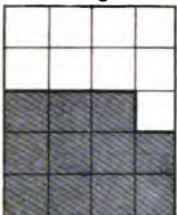
Cities of this description have quadrupled their inhabitants in Europe since 1831, but in the United States they have multiplied 23-fold, viz. :—

	Population of Cities.			
	Europe.	United States.	Colonies.	Total.
1831	10,700,000	510,000	...	11,210,000
1861	22,600,000	8,100,000	400,000	26,100,000
1891	44,800,000	11,700,000	1,700,000	58,200,000

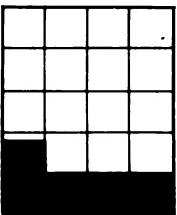
Thus cities (over 50,000 souls) show an increase of 470 per cent. in 60 years, while the population outside them has risen

**URBAN AND RURAL POPULATION
COMPARED IN 1891.**

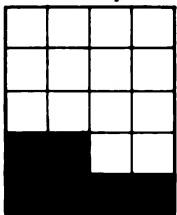
U. Kingdom



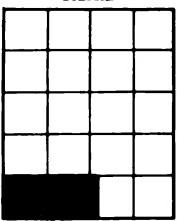
France



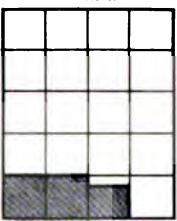
Germany



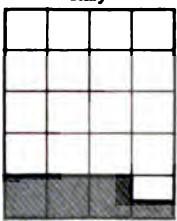
Russia



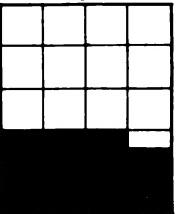
Austria



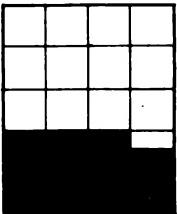
Italy



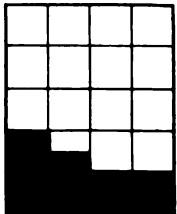
Spain



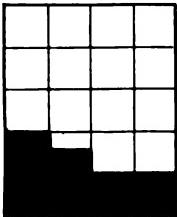
Holland



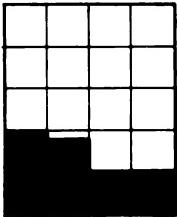
Belgium



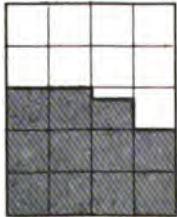
U. States



Canada



Australia



Urban is shaded.



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only 70 per cent., the former growing $6\frac{1}{2}$ times faster than the latter. Europe, as we have seen, has 255 cities of this class, whose aggregate population, it will be found, rose from $25\frac{1}{4}$ millions in 1861 to 45 millions in 1891. The natural increase of these cities in thirty years would have been $8\frac{1}{2}$ millions, from which it appears that at least 10 million persons of the rural population must have flocked into the cities in that interval. They were attracted mostly by higher wages, the earnings of factory hands and domestic servants exceeding those of rustic labourers. At the same time even among the educated classes this migration from country to city has been general, and Laveleye feelingly deplores it as injurious to rural interests. If we distinguish all population under three heads—first, cities of 50,000 upwards; secondly, towns between 10,000 and 50,000; thirdly, rural—we find in 1891 as follows:—

	Cities.	Towns.	Rural.	Total
U. Kingdom . .	18,200,000	7,400,000	17,200,000	37,800,000
Eur. Continent . .	31,700,000	24,900,000	262,800,000	319,400,000
U. States . .	11,700,000	5,700,000	45,200,000	62,600,000
Total . .	56,600,000	38,000,000	325,200,000	419,800,000

Rural population constitutes in the United Kingdom 45, on the European Continent 82, and in the United States 72, per cent. of the total. There is no country in Europe except Great Britain where urban population exceeds rural. By urban we understand the aggregate of all towns and cities over 10,000 souls, and in 1891 the position of the principal countries of Europe was in this respect as follows:—

	Urban.	Rural.	Total.	Urban Ratio, Per Cent.
U. Kingdom . .	20,600,000	17,200,000	37,800,000	55
France . .	9,200,000	29,100,000	38,300,000	24
Germany . .	15,600,000	36,600,000	52,200,000	30
Russia . .	10,900,000	86,900,000	97,800,000	11
Austria . .	5,600,000	35,800,000	41,400,000	14
Italy . .	5,300,000	25,400,000	30,700,000	17
Other countries ¹	10,000,000	49,000,000	59,000,000	17
Europe . .	77,200,000	280,000,000	357,200,000	22

¹ See table in Appendix.

18 INDUSTRIES AND WEALTH OF NATIONS

Vital statistics for five years ending 1892 show that five countries of Europe have a birth-rate under, and fifteen countries over, 30 per thousand, those under being France, Ireland, Spain, Sweden, and Switzerland; they also show that death-rate exceeds 20 per thousand in all countries except the United Kingdom and Scandinavia.

The mean density of population in Europe is 93 to the square mile; all countries, however, are above 100 except Norway, Sweden, Russia, and Spain. The ratios of the various countries show as follows, per square mile:—

Sweden . . .	28	Scotland . . .	140	Italy . . .	272
Russia . . .	50	Austria . . .	169	Holland . . .	374
Spain . . .	96	France . . .	188	England . . .	530
Ireland . . .	138	Germany . . .	248	Belgium . . .	550

Density of population has no necessary effect on the prosperity of a country, or even on the rate of wages. Scotland and Ireland are almost equal in the number of inhabitants to the square mile, yet the wealth of the former country, as will be shown hereafter, exceeds that of the latter by 60 per cent. England has three times as dense a population as France, and wages are, nevertheless, nearly equal in the two countries. Spain is thinly, Italy thickly, populated, and both countries are poor. Belgium has the maximum, Sweden the minimum, per square mile, and both are remarkably prosperous.

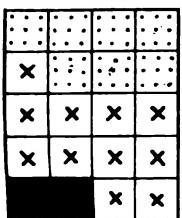
The number of workers is usually found to be 45 per cent. of the population, and the total for Europe, United States, and the British Colonies is over 201 millions, viz.:—

	Agriculture.	Manufactures.	Various.	Total.
U. Kingdom . . .	2,530,000	9,030,000	5,260,000	16,820,000
France . . .	7,220,000	4,720,000	5,350,000	17,290,000
Germany . . .	9,350,000	9,230,000	5,320,000	28,900,000
Austria . . .	12,940,000	4,620,000	8,090,000	20,650,000
Other States ¹ . . .	54,250,000	17,080,000	15,840,000	87,170,000
Europe . . .	86,290,000	44,680,000	34,860,000	165,830,000
United States . . .	10,740,000	5,950,000	14,920,000	31,610,000
British Colonies . . .	1,580,000	1,170,000	1,450,000	4,200,000
Total . . .	98,610,000	51,800,000	51,230,000	201,640,000

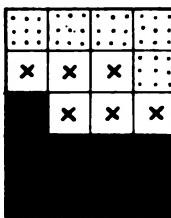
¹ These are detailed in the Appendix.

OCCUPATIONS OF MANKIND.

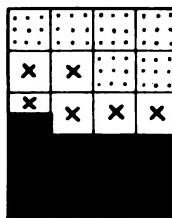
G. Britain



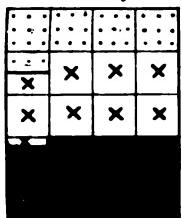
Ireland



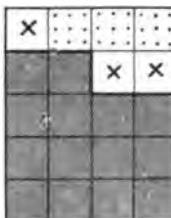
France



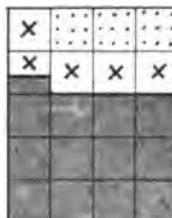
Germany



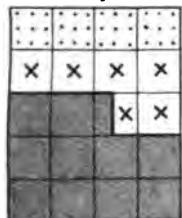
Russia



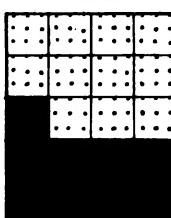
Austria



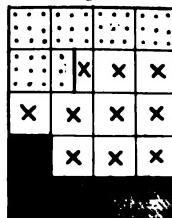
Italy



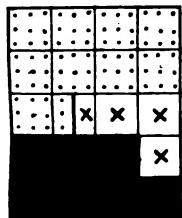
Holland



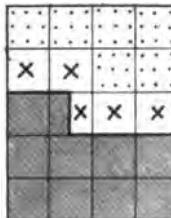
Belgium



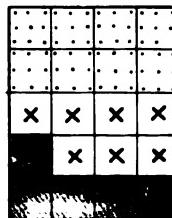
U. States



Canada



Australia

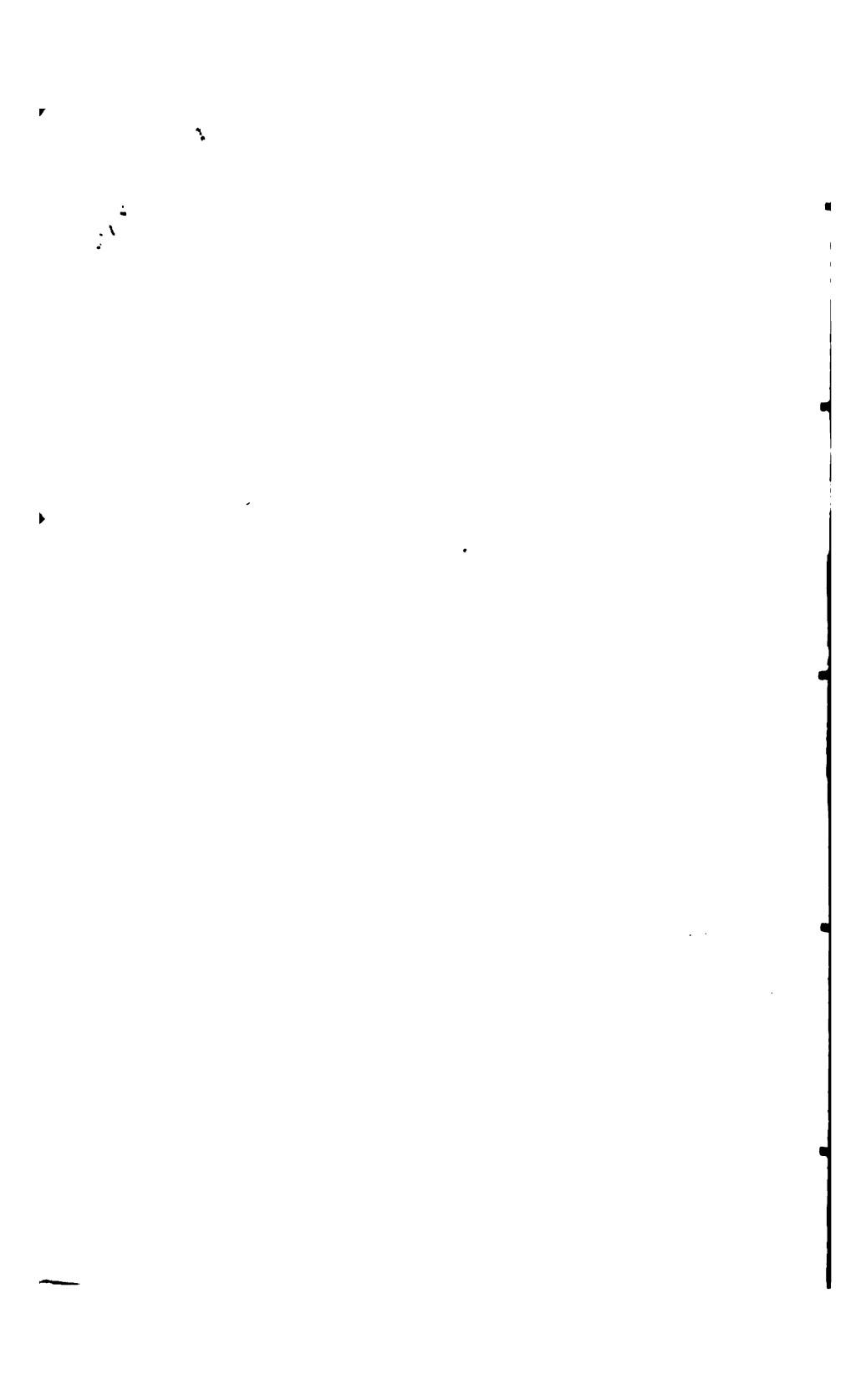


Agriculture.

Manufactures & Mining. X X X

Commerce, &c. . . .





One-half of the world is engaged in agricultural pursuits, a fourth in manufactures, one-tenth in trade and transport, and the remainder (15 per cent.) in professions, public service, & other useful occupation.

ENERGY

In little more than half-a-century the working-power of nations has trebled in Europe, and multiplied eight-fold in the United States, viz. :—

	Millions of Foot-Tons Daily.		Foot-Tons per Inhabitant.	
	1840.	1895.	1840.	1895.
United Kingdom . . .	9,720	61,410	360	1,570
France	11,460	82,460	380	850
Germany	10,360	46,360	310	900
Russia	44,020	82,700	740	780
Austria	11,070	28,790	350	560
Italy	4,160	12,030	220	390
Other countries . . .	14,260	34,740	350	640
Europe	105,650	293,490	420	800
United States . . .	17,350	128,760	1,020	1,850
British Colonies . . .	1,050	18,710	800	2,020
Total	124,050	440,960	460	990

Taking the nations of Christendom in the aggregate, the average energy per inhabitant has more than doubled since 1840, that is to say, five men can now do as much as eleven could fifty years ago. This prodigious increase is mainly due to the development of steam, which has grown 35-fold in the interval, the total energy being made up as follows :—

	Millions of Foot-Tons Daily.			
	Hand.	Horse.	Steam.	Total.
1840	23,400	93,900	6,750	124,050
1895	38,760	179,880	222,820	440,960

In 1840 steam was in its infancy, and constituted only 5 per cent. of the working-power of Christendom ; in 1895 it

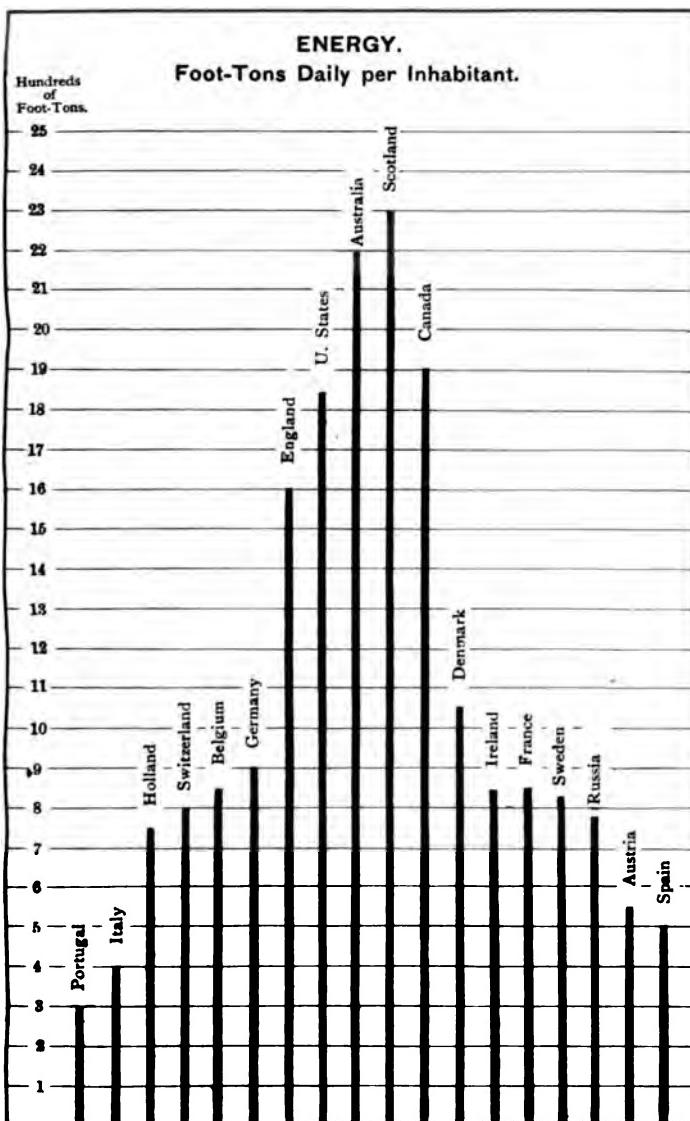
was equal to the aggregate force of the men and horses of all nations, and as it is much cheaper than horse or hand-power, its use has greatly tended to a fall of prices, owing to reduction of cost not only in production, but also in freight and distribution. The horse-power of steam at various dates in the nations of Christendom summed up approximately thus:—

	Steam, Horse-Power.		
	1840.	1870.	1895.
Fixed . . .	832,000	4,167,000	11,840,000
Railway : :	489,000	10,876,000	32,235,000
Steamers : .	326,000	2,746,000	12,005,000
Total . . .	1,647,000	17,789,000	55,580,000

Steam-power has grown with accelerated speed in late years; thus in thirty years, down to 1870, the annual increase was 540,000 horse-power, but in twenty-five years, since 1870, it has been 1,510,000. In round numbers railway locomotives stand for 60, steamboats 20, and manufactures, mines, &c., 20 per cent. of the steam-power of the world. During the last thirty or forty years so marvellous a change has taken place in the industries and habits of civilised nations, coincident with a great increase of commerce and travelling, that whereas power was formerly used chiefly for production, in one form or other, it is now principally utilised for distribution, that is for the conveyance of passengers and merchandise. The following table shows the amount of energy:—

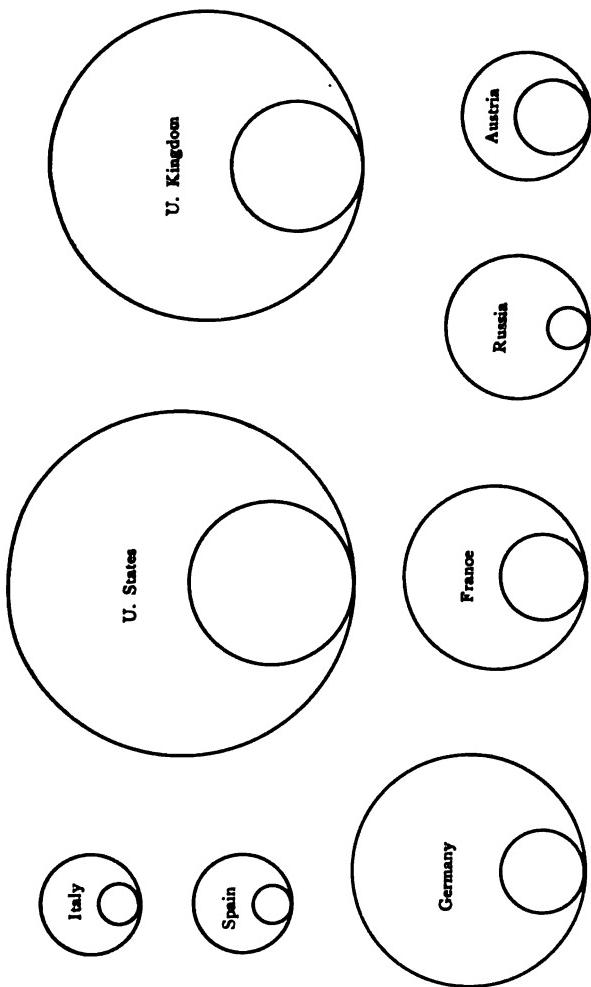
	Millions of Foot-Tons Daily.		
	Production.	Distribution.	Total.
1840 : . . . :	78,700	50,800	124,000
1895 : . . . :	174,120	266,840	440,960

In fifty-five years the power used for production has risen 140 per cent., that for distribution or locomotion 430 per cent. The following table distinguishes animal energy from that produced by steam, as well as what is used for production from that used in transport or distribution:—



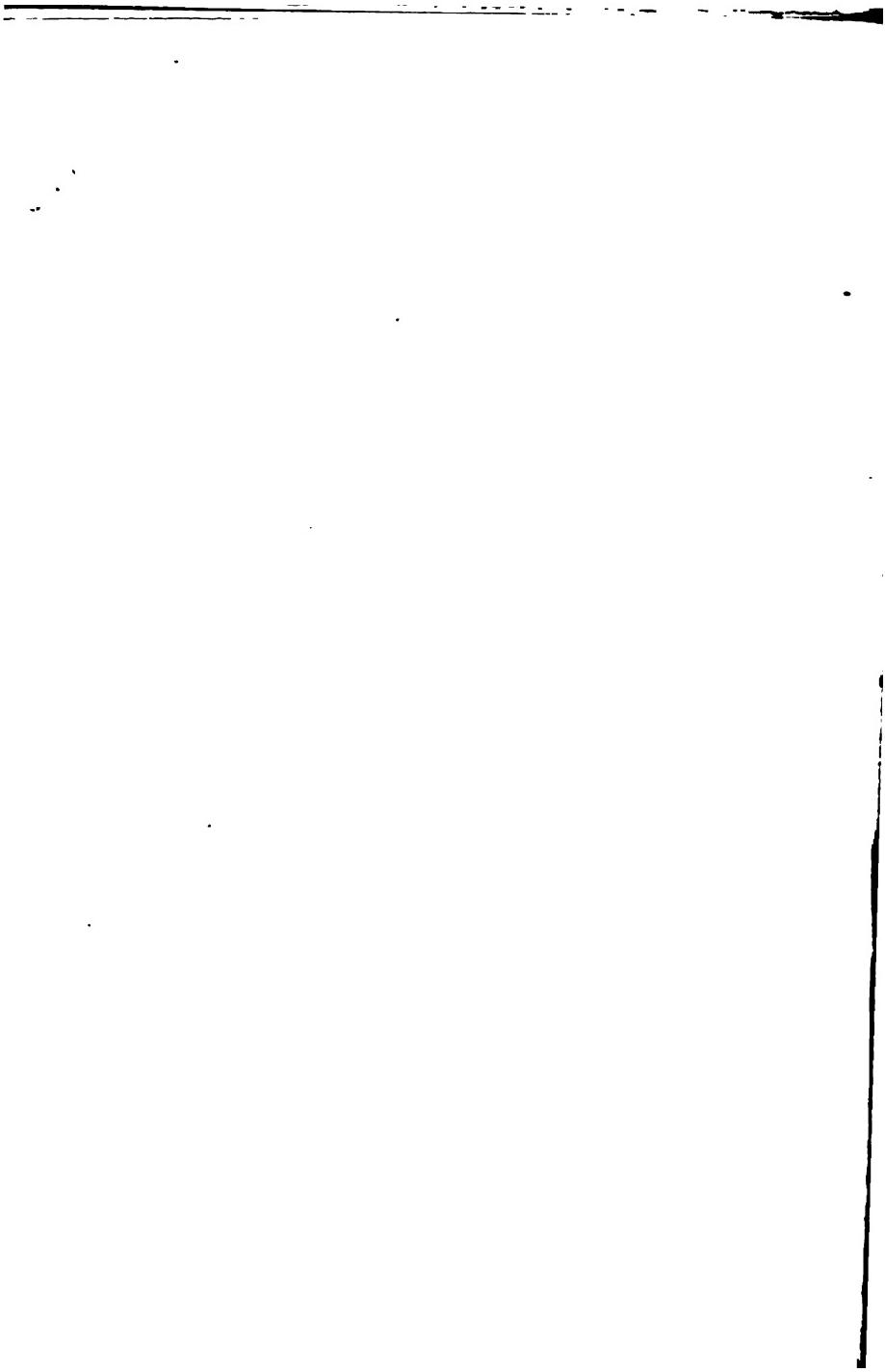


STEAM-POWER IN 1860 AND IN 1895.



The large circles indicate the present steam-power, the small ones that of 1860.

140
120
100
80
60
40
20
10



Millions of Foot-Tons Daily.

	Animal.	Steam.	Total.	Production.	Distribution.
U. Kingdom	9,530	51,880	61,410	15,160	46,250
France	12,800	19,660	32,460	11,400	21,060
Germany	15,760	30,600	46,360	18,800	27,560
Russia	71,500	11,200	82,700	41,700	41,000
Austria	14,230	9,560	23,790	10,800	12,990
Italy	6,550	5,480	12,030	5,300	6,730
Other States	16,540	18,200	34,740	13,410	21,330
Europe	146,910	146,580	293,490	116,570	176,920
U. States	61,000	67,760	128,760	49,460	79,300
Brit. Colonies	10,730	7,980	18,710	8,090	10,620
Total	218,640	222,320	440,960	174,120	266,840

It appears, therefore, that 40 per cent. of the working-power of the world is used for production, 60 per cent. for transport or distribution, which is exactly the reverse of the ratios in 1840.

AGRICULTURE

Under this general term is embraced all field industry, whether tillage or pastoral, connected with the great business of the food supply of nations. It has always been the chief occupation of mankind, but the methods in use until the middle of the present century were for the most part rude. Whether owing to frequent wars, or to the enslaved condition of European peasantry, little or no improvement took place during a thousand years, from the age of Charlemagne till the revolutionary epoch of 1848. Famines were so frequent that Walford gives a list of 160, in which many millions of persons perished. Even after the fall of Buonaparte, in 1815, tillage was in most countries as in the time of the Pharaohs; wooden ploughs were in use, and grain was threshed by driving horses over it. Reaping-hooks and scythes may still be seen in some countries, but the introduction of machinery during the last forty years has been so general that labour is more effective. The production of food in Europe in 1895 shows

22 INDUSTRIES AND WEALTH OF NATIONS

an increase of 76 per cent. in grain, and 38 per cent. in meat, since 1840, viz. :—

	Grain, Tons.	Meat, Tons.
1840 . . .	82,800,000	6,800,000
1895 . . .	146,000,000	9,380,000

In the above interval population rose 44 per cent., from which we see that the production of meat is less, that of grain more, per inhabitant than in 1840. In order to compare the production in different countries it is convenient to reduce all kinds of food to a common denominator as bushels of grain, taking a ton of meat as equal to 8 tons of grain, and 3 tons of potatoes, or 100 gallons of wine, equal to a ton of grain. The following table shows the ordinary production for the several countries and the number of bushels to each farming hand :—

	Millions of Bushels.			Bushels per Hand.
	Grain.	Sundries.	Total.	
United Kingdom . .	301	435	736	290
France . . .	724	908	1,632	227
Germany . . .	682	942	1,624	174
Russia . . .	2,120	948	3,068	89
Austria . . .	780	565	1,345	104
Other States . .	1,126	1,519	2,645	130
Europe . . .	5,733	5,317	11,050	128
United States . .	3,575	1,658	5,233	486
Total . . .	9,308	6,975	16,283	168

As regards the capability of a country for supporting population, it may be said as a rule that the number of inhabitants should not exceed half the number of acres in the productive area; that is to say, for every 100 acres not more than 50 souls. The following table shows that there are seven European countries over-populated, viz., Belgium, England, Holland, Scotland, Italy, Germany, and Switzerland :—

Inhabitants per 100 Productive Acres.					
United States . .	20	Sweden . .	40	Italy . .	60
Russia . . .	22	France . .	43	Scotland . .	86
Ireland . . .	30	Austria . .	50	Holland . .	95
Denmark . . .	33	Switzerland .	58	England . .	112
Spain . . .	35	Germany . .	59	Belgium . .	116

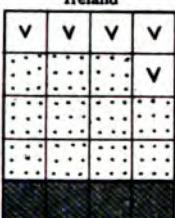
AGRICULTURE.

Relative Areas of Crops, Pasture and Waste.

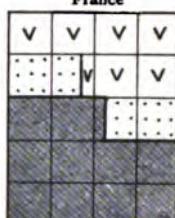
G. Britain



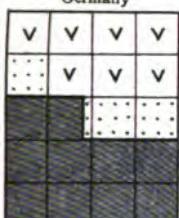
Ireland



France



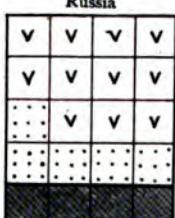
Germany



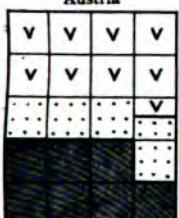
U. States



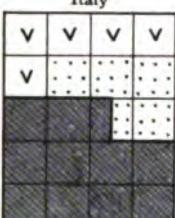
Russia



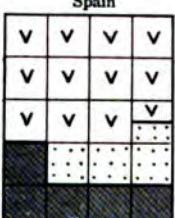
Austria



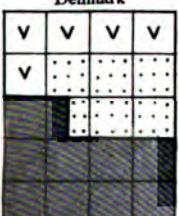
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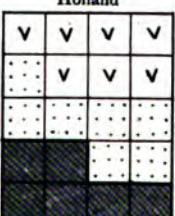
Spain



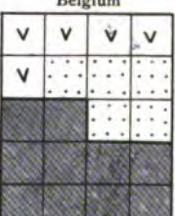
Denmark



Holland



Belgium

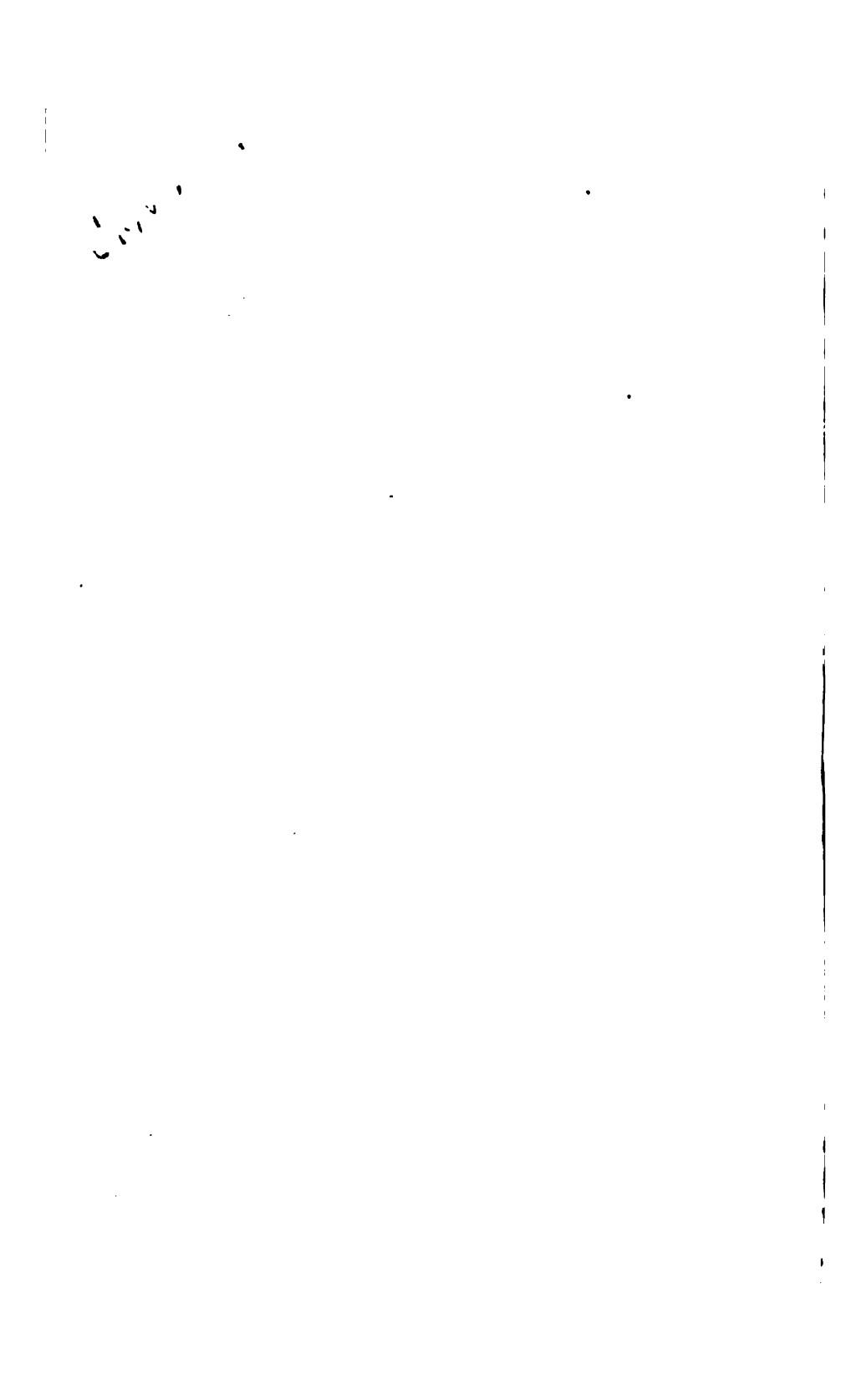


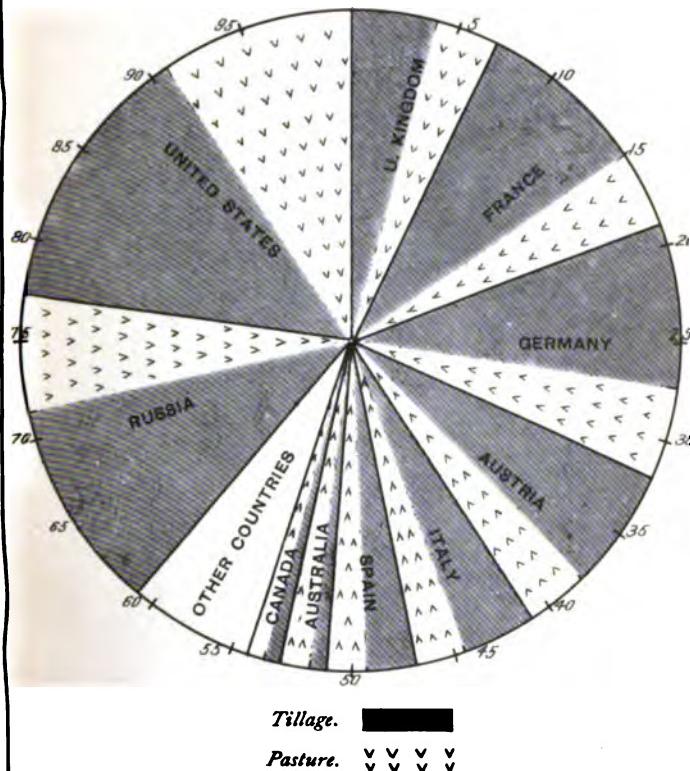
Crops.

Pasture. : : : Waste. v v v

Waste includes forests, mountains, &c.





VALUE OF AGRICULTURAL PRODUCTS.



It will be seen hereafter that those countries which have more than 50 souls to 100 productive acres are obliged to import food largely. The productive area of Europe comprises 580 million acres of tillage, and 527 million of pasture. If we consider the product per acre of the area under tillage in various countries, as regards the value of crops, we find the ratio is very low in the United States—only 43 shillings, as compared with 84 in France and 126 in the United Kingdom; but it pays better in the United States, because each farming hand cultivates 21 acres, against 9 in France and 8 in the United Kingdom. The following table shows the area under crops, the collective value of grain and green crops, and the ratio per acre:—

	Million Acres.	Millions £.	£ per Acre.
United Kingdom	20	126	6·3
France	67	284	4·2
Germany	65	262	4·0
Russia	255	870	1·5
Other States	173	627	3·6
Europe	580	1,669	2·9
United States	226	486	2·2
British Colonies	36	55	1·5
Total	842	2,210	2·6

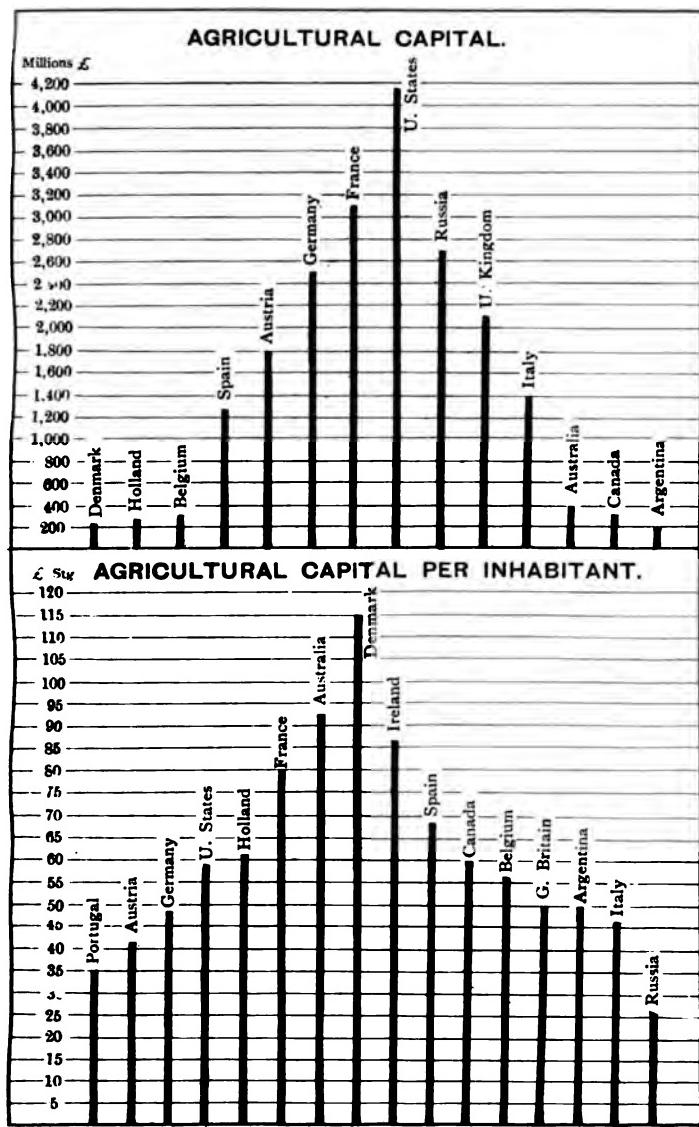
The area under crops has risen from 402 million acres in 1840 to 842 millions in 1894, the number of hands at present employed being 98 millions, which gives an average of $8\frac{1}{2}$ acres to each. But if the economy of labour were as well understood in all countries as in the United States, where each hand cultivates 21 acres, the tilled area would be $2\frac{1}{2}$ times as great as it is. The production of food, as already shown, reducing all kinds to a grain denominator, is equivalent in the United States to 12 tons, in Europe to 3 tons, per farming hand, which shows what an enormous waste of labour there is in Europe, for want of improved agricultural machinery. European peasants undergo more severe toil than the American farmers, yet four of them produce no more food than one agricultural hand in the United States. The value of all farming products in 1894 was approximately as follows:—

	Millions £ Sterling.				
	Grain.	Green Crops.	Meat.	Sundries.	Total.
United Kingdom	50	76	55	49	230
Continent . .	801	742	852	440	2,335
United States .	217	269	163	164	813
British Colonies .	31	24	19	53	127
Total . .	1,099	1,111	589	706	3,505

It must here be observed that the above total of 3505 millions sterling does not represent solely articles of food, since green crops include cotton, flax, &c., and under the head of sundries are included hides, wool, and other articles used for clothing or manufactures. Moreover, the above table comprises the values of all products consumed by cattle, so that when all deductions are made we find the value of human food does not reach 2400 millions sterling, or two-thirds of the total. The population of the above countries being, as we have seen, 450 millions, it follows that the consumption of grain, potatoes, meat, dairy products, &c. (taking their value on the farm), hardly exceeds £5 per head yearly, or 2 shillings a week.

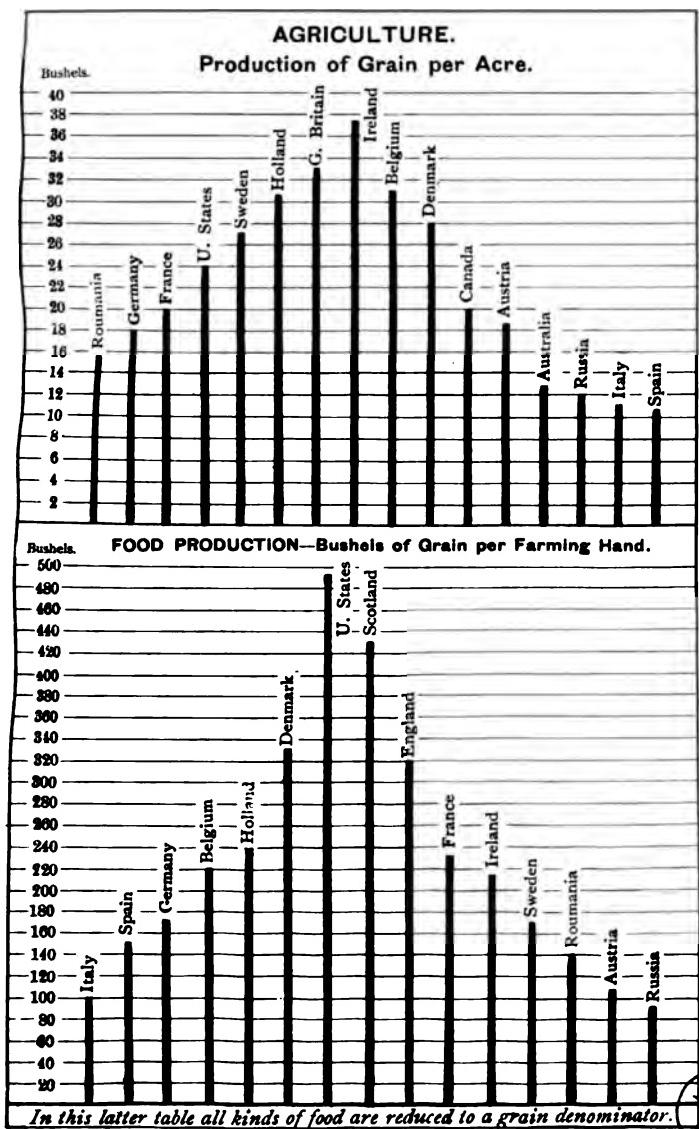
Pastoral industry, as already shown, has not kept pace in Europe with population. If we compare the actual numbers of live-stock with those in 1850, we find that 100 inhabitants of Europe have now only 30 horned cattle and 58 sheep, as compared with 34 cattle and 78 sheep in 1850. The total value of pastoral products in Europe last year was approximately 896 millions sterling, while those of tillage were 1681 millions. The values compared in various countries thus:—

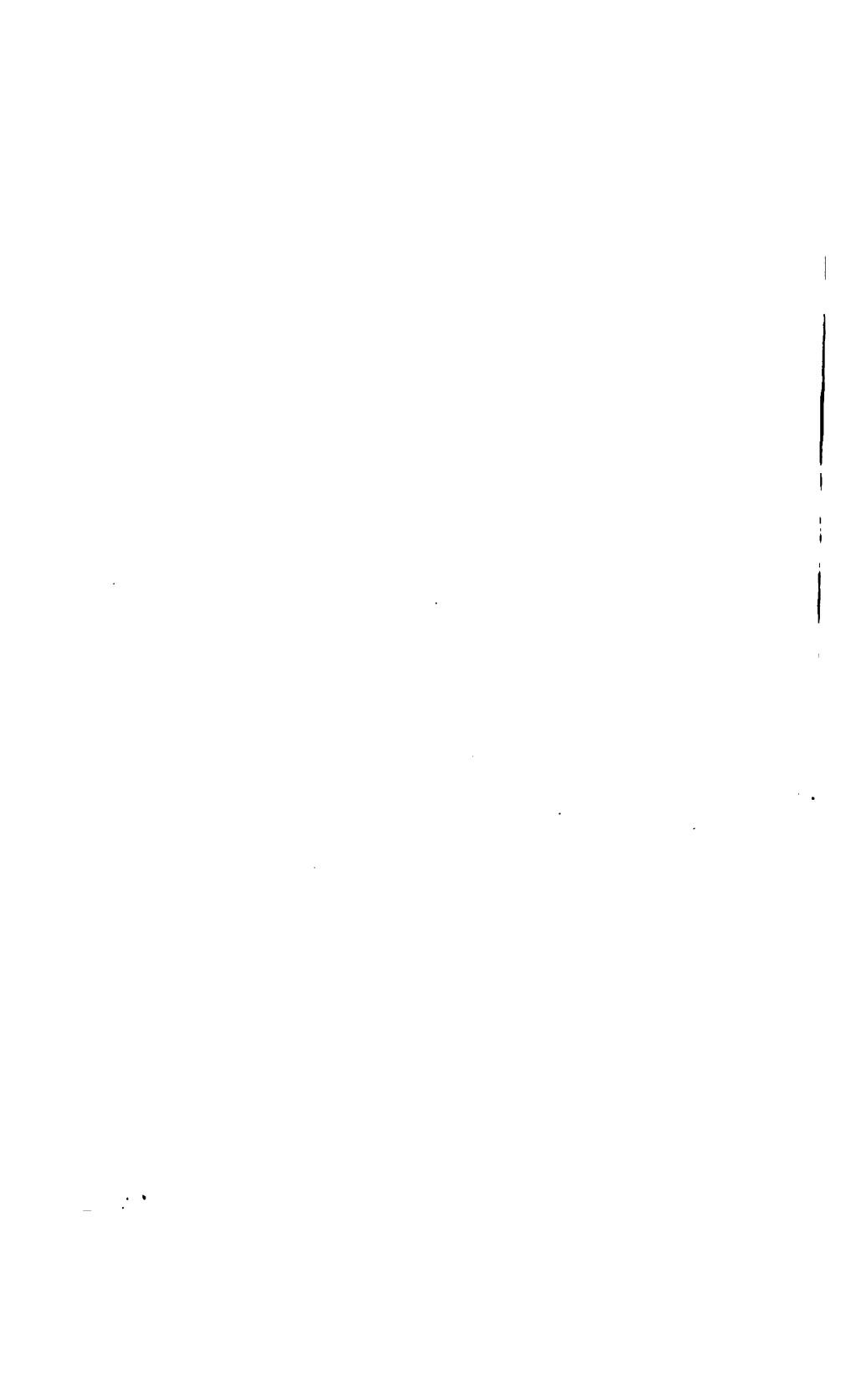
	Millions £ Sterling.		
	Tillage.	Pastoral.	Total.
United Kingdom	126	104	230
France	284	132	416
Germany	262	155	417
Russia	370	170	540
Austria	210	109	319
Other States	417	226	643
Europe	1,669	896	2,565

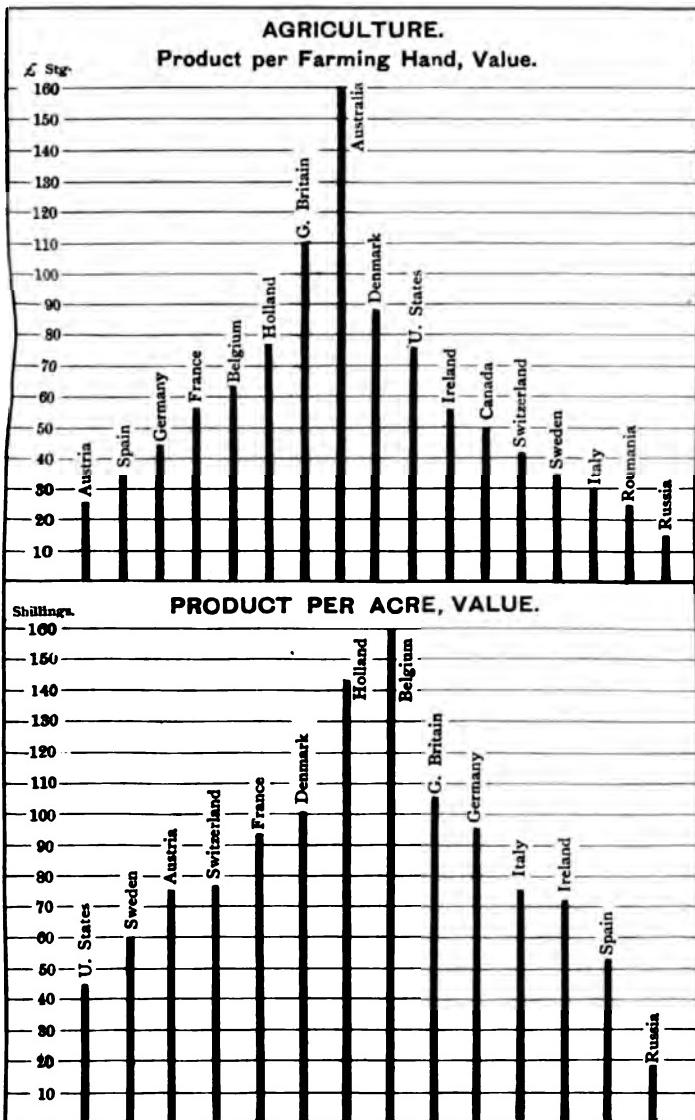


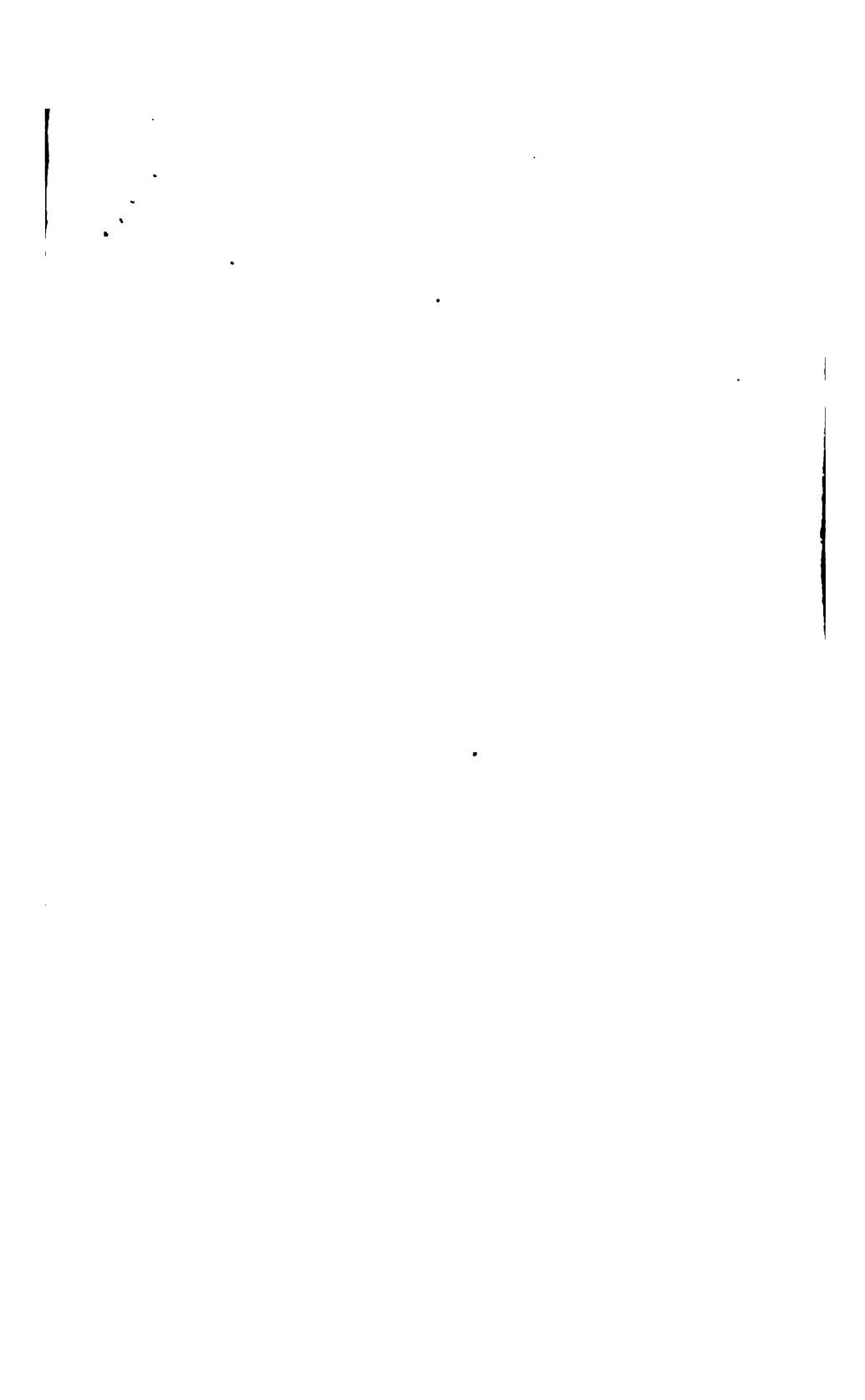
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The farm products of Europe sum up a value of 2565 millions, or three times as much as those of the United States, but the former occupy 86 million persons, the latter hardly 11 millions, so that the average product per hand is three times as great in the United States as in Europe, as regards value, the average as regards weight of food being four to one, as already shown. Hence it appears that farm products are much cheaper in the United States than in Europe.

Agricultural capital in the nations of Christendom exceeds 21,000 millions sterling, land representing more than 80 per cent. of the total. The principal countries show as follows :—

	Millions £ Sterling.			
	Land.	Cattle, &c.	Total.	£ per Inhab.
United Kingdom . .	1,686	391	2,077	53
France . .	2,580	513	3,093	80
Germany . .	1,977	531	2,508	48
Russia . .	2,113	597	2,710	26
Austria . .	1,473	324	1,797	41
Italy . .	1,180	219	1,399	45
Other States . .	2,803	543	3,346	56
Europe . .	13,812	3,118	16,930	46
United States . .	3,314	828	4,142	59
British Colonies . .	466	231	697	75
Total . .	17,592	4,177	21,769	48

The value of all farm products being, as already shown, approximately 3505 millions, the ratio of gross product to capital is about 16 per cent. The ratio, as a rule, is high where land is cheap, and *vice versa*; thus it is 11 per cent. in the United Kingdom, 16 on the European Continent, 20 in the United States, and 18 in the British Colonies. Comparing the above statement with a similar one for 1840, we find :—

	Millions £ Sterling.			
	1840.			
	Land.	Cattle, &c.	Total.	
Europe . .	6,471	1,695	8,166	13,812
U. States . .	400	196	596	3,118
Colonies . .	44	11	55	697
Total . .	6,915	1,902	8,817	21,769
	1894.			
	Land.	Cattle, &c.	Total.	

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If we compare agricultural capital and product with the number of hands engaged, the result will be as follows :—

	Millions £.		No. of Hands.	£ per Hand.	
	Capital.	Product.		Capital.	Product.
U. Kingdom .	2,077	230	2,530,000	820	91
Eur. Continent .	14,853	2,835	83,760,000	177	28
United States .	4,142	818	10,740,000	385	76
Colonies .	697	127	1,580,000	441	80
Total .	21,769	3,505	98,610,000	220	35

The amount of capital and of product per hand is higher in the United Kingdom than in the United States, and higher also than the average for the British Colonies.

FORESTS AND FISHERIES

These are industries of minor note, occupying an indeterminate number of persons. A large number of the farming population in Russia, Norway, Canada, and some other countries spend a portion of the year in felling timber, and in those countries like Norway, which have an extensive seaboard, many of the farmers are also fishermen. The aggregate value of the two industries does not reach 300 millions sterling per annum ; hence the total number of persons employed can hardly exceed 6 millions. The annual product may be summed up thus :—

	Forestry. £	Fishing. £	Total. £
United Kingdom .	2,000,000	7,500,000	9,500,000
France .	14,900,000	4,800,000	18,800,000
Germany .	13,000,000	1,000,000	14,000,000
Russia .	40,200,000	2,200,000	42,400,000
Austria .	18,000,000	300,000	18,300,000
Scandinavia .	13,000,000	5,000,000	18,000,000
Other States .	15,800,000	3,200,000	19,000,000
Europe .	116,000,000	24,000,000	140,000,000
United States .	120,000,000	9,400,000	129,400,000
British Colonies .	21,000,000	5,600,000	26,600,000
Total .	257,000,000	39,000,000	296,000,000

The felling of timber in Europe reaches 20 million tons monthly, and in the United States is estimated at the high figure of 50 million tons a month. Moreover, the cutting in Canada by latest returns was nearly 4 million tons monthly. Thus it appears that the forests of the above countries yield 3 million tons of timber daily.

The following table shows the actual forest area, the weight of timber cut yearly, and the possible yield :—

	Forest. Million Acres.	Cutting. Million Tons.	Cwt. per Acre.	Possible Yield. Million Tons.
Russia . . .	498	130	5	374
Scandinavia . . .	64	18	6	48
Other States . . .	146	82	11	110
Europe . . .	708	230	7	532
United States . . .	466	600	26	350
Canada . . .	218	48	4	164
Total . . .	1,892	878	12	1,046

Where afforestation is carefully attended to, the product (between firewood and timber) may reach 15 cwt. yearly per acre without diminishing the forest area. Thus Europe could yield more than double what the forests now produce. On the other hand the United States are rapidly consuming their forest capital, the actual felling of timber being 70 per cent. more than the normal growth ; hence it will be necessary in the coming century to take measures to limit the destruction of forests, and preserve a minimum of 200 million acres, that is, 1 acre per inhabitant of the probable population one hundred years hence. In the above table the forest area of Canada is that of the old provinces, exclusive of the North-West, which has 1030 million acres under timber.

The product of all European forests is equal to a value of 40 pence an acre yearly, but if Russia were excluded the average would be 85 pence. The forests of the United States yield 62 pence, those of Canada 18 pence, per acre.

The countries which stand pre-eminent in fisheries are the United States, Great Britain, France, Canada, and Norway.

The total number of men who live exclusively by fishing is about 850,000. The value of fish taken yearly averages £45 per man, representing about 4 tons of fish. The consumption of fish as an element of food is, of course, much less than that of meat, being approximately as follows :—

	Fish. Tons.	Lbs. per Inhabitant.	Meat. Tons.	Lbs. per Inhabitant.
Europe . . .	1,800,000	11	10,400,000	64
United States .	800,000	25	4,400,000	140

The relation between fish and meat as articles of food is the same in the United States as in Europe, namely, as one to six.

MANUFACTURES

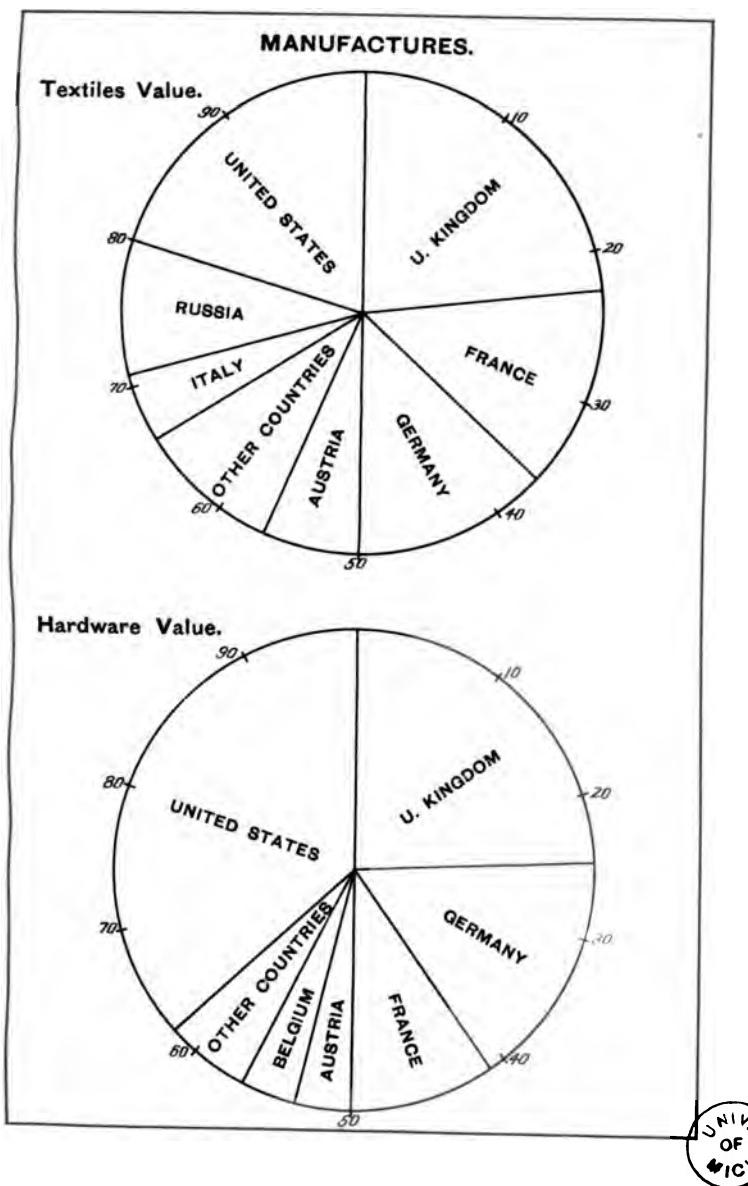
The nineteenth century has witnessed a much greater development of manufactures than of agriculture. To go back no farther than 1840, we find that while the aggregate production of grain in Europe, United States, and the British Colonies has risen only 110 per cent., that of meat 60 per cent., the output of manufactures has more than trebled, the value showing approximately as follows :—

Year.	Millions £ Sterling.			
	Textiles.	Hardware.	Sundries.	Total.
1840	246	90	1,474	1,810
1894	826	603	4,247	5,676

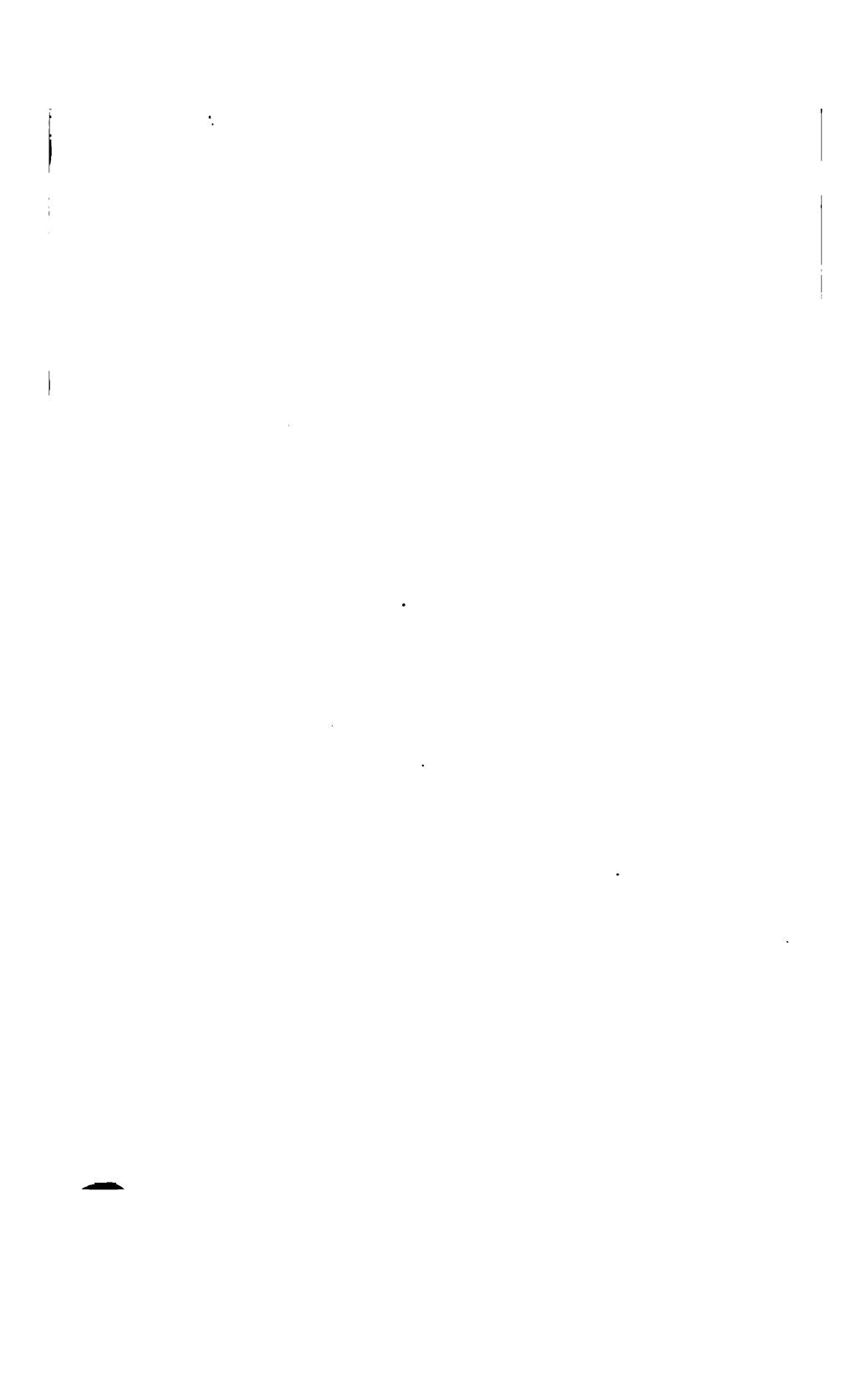
The increase has been much greater in quantity than in value, the cost of raw material and manipulation being considerably less now than fifty years ago. Some articles of manufacture are produced at a quarter of their cost in 1840, the result of machinery, cheap freight, and other causes.

Textiles.—The factories of Europe and America consumed in 1894 nearly four times the weight of fibre used in 1840 ; the consumption now averages 24 lbs. per head, against 11 lbs. in 1840, showing as follows :—

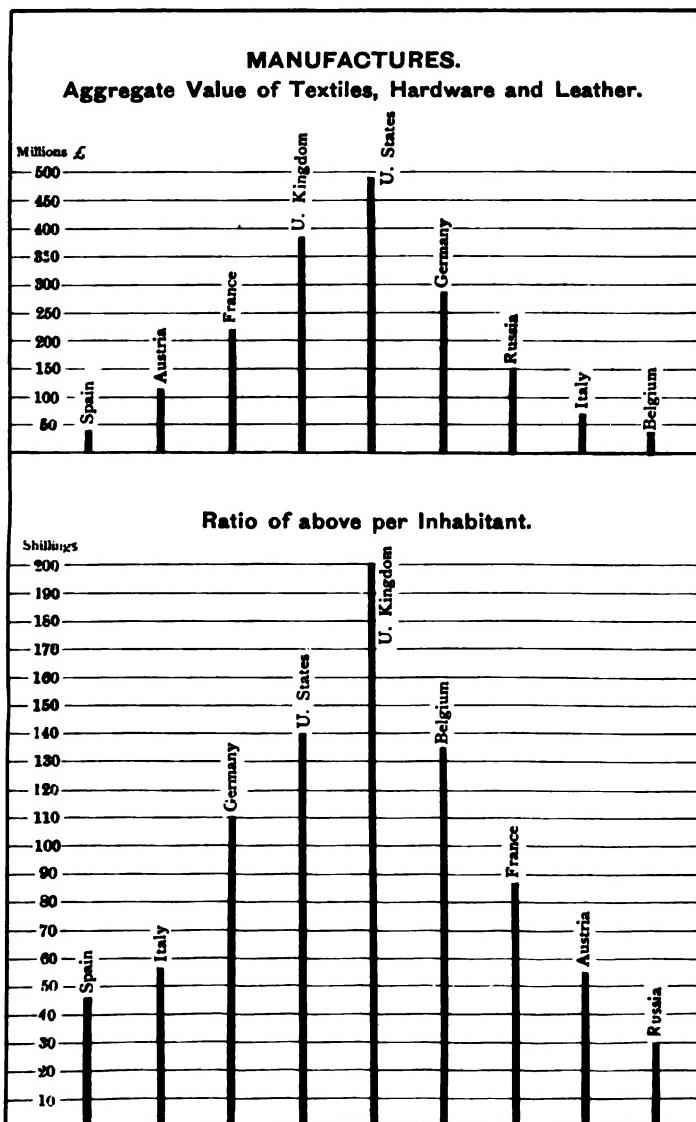
Year.	Tons.			
	Cotton.	Wool.	Flax, &c.	Total.
1840	380,000	340,000	590,000	1,810,000
1894	2,226,000	1,068,000	1,544,000	4,838,000

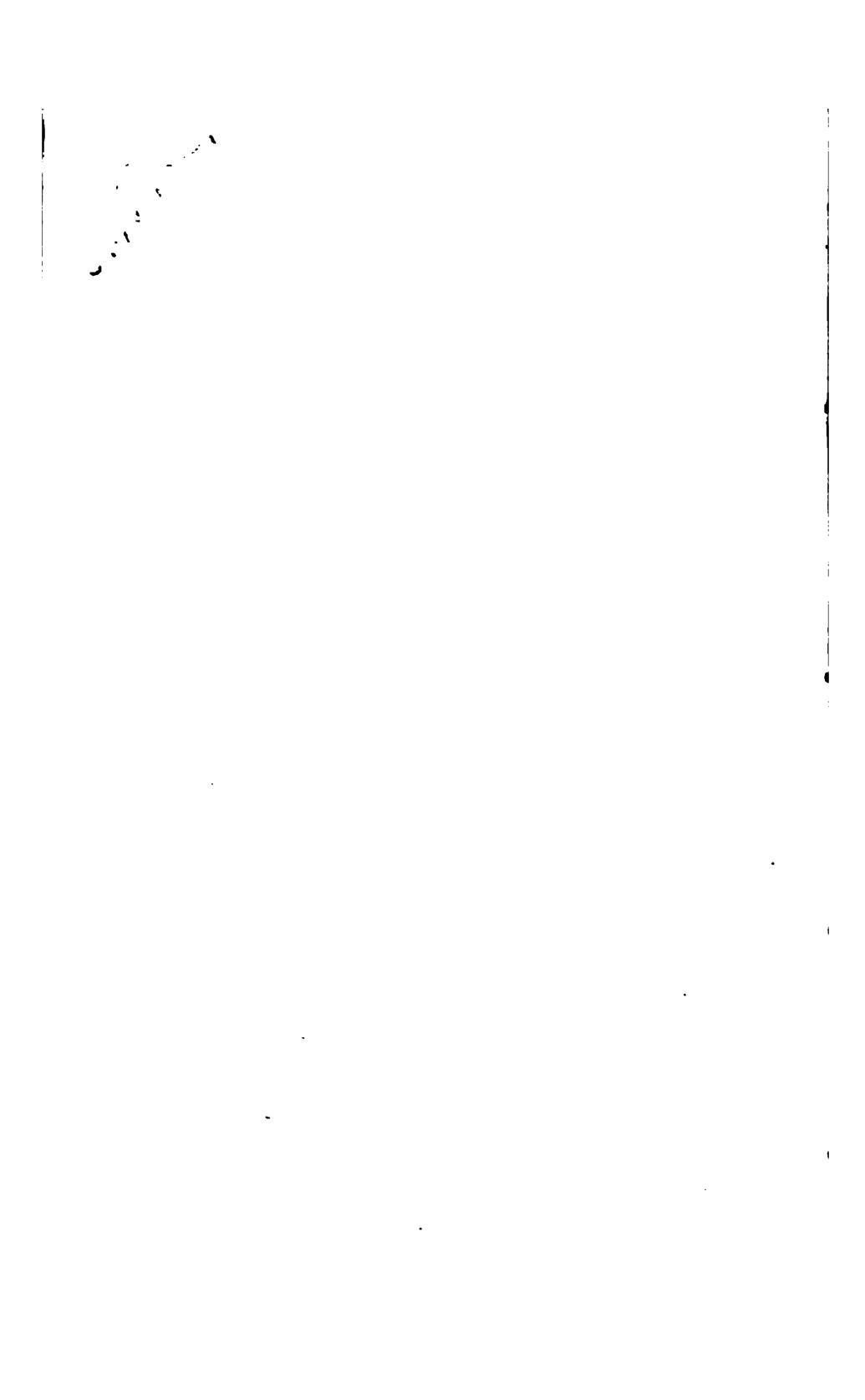


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Wool and cotton were nearly equal as regards weight down to 1840, but since that year the latter has rushed ahead, and at present more than doubles wool. Jute came first into notice in 1850, the consumption now exceeding 600,000 tons yearly. The value of all textile manufactures is approximately 826 millions sterling per annum, an average of £170 for every ton of fibre consumed. The shares corresponding to the principal nations in the output of textiles are shown approximately as follows :—

Year.	Millions & Sterling.					
	U. King.	France.	Germany.	U. States.	Various.	Total.
1840 .	92	52	22	15	65	246
1894 .	191	115	108	161	251	826

In 1840 the United States held the lowest rank as regards textiles among the four great manufacturing nations, but since then the Union has passed both France and Germany in the race, and bids fair to rival Great Britain before long. In the manufactures of the world textiles stand for one-seventh of the total. Their value in various countries is approximately as follows :—

	Millions £.				
	Cottons.	Woollens.	Silks.	Linens, &c.	Total.
United Kingdom	92	62	6	31	191
France .	22	45	28	20	115
Germany .	35	42	17	14	108
Russia .	20	29	3	24	76
Austria .	18	15	5	18	56
Other States .	42	30	17	23	112
Europe .	229	223	76	130	658
United States .	56	44	18	43	161
Total .	285	267	94	178	819

The value of textiles made in the Colonies added to the above brings up the total to 826 millions.

The consumption of fibre in the world's factories averages 440,000 tons monthly, or almost 20,000 tons daily, and the output of goods is nearly 3 millions sterling each day. Cotton represents more than half the total weight, wool only one-

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fifth. The consumption of fibre among the principal nations is as follows, yearly :—

	Tons.			Lbs. per Inhabit-
	Cotton.	Wool.	Flax, &c.	tant.
U. Kingdom .	696,000	246,000	460,000	1,402,000 80
France . .	165,000	170,000	195,000	530,000 30
Germany . .	260,000	160,000	110,000	530,000 23
Russia . .	150,000	110,000	200,000	460,000 10
Austria . .	135,000	55,000	180,000	370,000 20
Other countries	800,000	117,000	179,000	596,000 14
Europe . .	1,706,000	858,000	1,324,000	3,888,000 22
United States .	520,000	210,000	220,000	950,000 30
Other countries	314,000	18,000	112,000	444,000 ...
Total . .	2,540,000	1,086,000	1,656,000	5,282,000

Europe consumes nearly four times as much fibre as it produces, the other parts of the world having a great surplus; the production may be summed up thus :—

	Tons.			
	Wool.	Cotton.	Flax, &c.	Total.
Europe . .	851,000	...	754,000	1,105,000
United States .	135,000	1,950,000	60,000	2,145,000
Australia . .	305,000	...	...	305,000
Argentina . .	120,000	...	15,000	135,000
The East, &c. .	175,000	590,000	827,000	1,592,000
Total . .	1,086,000	2,540,000	1,656,000	5,282,000

Hardware.—This industry has grown more than twice as fast as that of textiles, the production of iron being now ten times as great as in 1840, showing as follows :—

	Iron, Tons.				
	U. Kingdom.	U. States.	Germany.	Other States.	Total.
1840 .	1,390,000	290,000	170,000	830,000	2,680,000
1893 .	6,750,000	7,120,000	4,830,000	7,310,000	26,010,000

Fifty years ago Great Britain produced more than half the world's supply of iron, her share at present being one-fourth; she holds, moreover, the second place, her production being

much less than that of the United States. Down to the year 1860 France held next place after Great Britain, producing twice as much iron as Germany, but now the position of these countries is reversed, the make of iron in Germany being more than double the French. Comprehending under the term hardware all manufactured goods in which iron, steel, copper, or other metal forms the chief component, it may be said that Great Britain makes one-fourth, the United States one-third, and other nations the remainder, the output comparing with that of 1840 as follows :—

	Millions & Sterling.					
	U. King.	U. States.	Germany.	France.	Other States.	Total.
1840 .	30	10	12	12	26	90
1894 .	142	229	105	47	80	603

The value of metallic ores raised yearly averages 70 millions sterling ; it appears, therefore, that the hardware produced represents nearly nine times the value of the original mineral.

Leather.—This is the third great staple of manufacturing industry ; it employs more than 4 million hands, the annual output of whose labours amounts to 450 millions sterling, or about £1,500,000 a day. The actual weight of leather consumed is not known, but that of hides produced yearly gives ground for a well-reasoned estimate, 100 lbs. of hide yielding 60 lbs. of leather. The production and consumption of hides is as follows :—

	Tons Produced.					Consumption Tons Hides.
	Cowhide.	Sheep-skin.	Pigskin, &c.	Total.		
U. Kingdom .	49,000	40,000	18,000	102,000	196,000	
France .	58,000	27,000	20,000	105,000	150,000	
Germany .	79,000	18,000	36,000	133,000	220,000	
Russia .	124,000	65,000	48,000	237,000	190,000	
Other countries	155,000	82,000	60,000	297,000	366,000	
Europe .	465,000	232,000	177,000	874,000	1,122,000	
United States .	228,000	57,000	135,000	420,000	510,000	
Other countries	267,000	321,000	28,000	616,000	278,000	
Total .	960,000	610,000	340,000	1,910,000	1,910,000	

The consumption of hides in Europe greatly exceeds production, the deficit being covered by supplies from Australia and Argentina. If we reduce the hides to their equivalent in leather, it will be seen that the annual consumption of the latter, compared with population, averages 7 lbs. per inhabitant in the United Kingdom, 5 lbs. in France, 6 lbs. in Germany, 2 lbs. in Russia, and 4 lbs. for the whole of Europe, while the average in the United States reaches 10 lbs. per inhabitant. The world consumes almost 1,200,000 tons of leather yearly, or 100,000 tons monthly, and Great Britain stands for one-tenth of the total.

The total manufacturing output of nations at various dates has been approximately as follows :—

	Millions £ Sterling.			
	1820.	1840.	1860.	1894.
United Kingdom . . .	290	387	577	876
France . . .	240	330	430	596
Germany . . .	185	305	410	690
Austria . . .	105	175	232	328
Other States . . .	840	517	710	1,076
Europe . . .	1,160	1,714	2,859	3,566
United States . . .	55	96	392	1,952
Total . . .	1,215	1,810	2,751	5,518

The United States produce about one-third of the manufacturing total of nations, as they do also of grain and meat, while their population is less than one-sixth. The value of American manufactures is artificially raised, by Protective tariffs, fully 33 per cent. over the real value; the latter amounts, therefore, to about 1464 millions sterling, or the value conjointly of British and French manufactures. American manufactures have multiplied just twenty-fold since 1840, while those of Europe have only doubled. Nearly all American manufactures are produced by machinery, while in Europe more than half is hand-work; the result is that the output per hand in the United States is much greater, viz. :—

	Value, Millions £.	Hands.	£ per Hand.
United Kingdom . .	876	8,185,000	107
France . . .	596	4,480,000	133
Germany . . .	690	8,830,000	79
Austria . . .	328	4,470,000	73
Other States . .	1,076	12,435,000	86
Europe . . .	3,566	38,400,000	93
United States . .	1,952	5,400,000	360 ¹

The fixed steam-power of nations is approximately thus: Europe 63, United States 37, per cent.; and manufacturing output: Europe 65, United States 35, per cent. of total. At the same time the number of operatives in the United States is only 12 per cent., while that in Europe is 88 per cent., of the total, showing a great economy of labour in the former, due to the universal use of improved machinery.

As regards the consumption of manufactured goods, if we consider only three of the most important, we find as follows:—

	Millions £ Sterling per Annum.				Shillings per Inhab.
	Textiles.	Hardware.	Leather.	Total.	
United Kingdom	122	96	56	274	138
France . .	91	46	37	174	90
Germany . .	92	94	60	246	96
Russia . .	76	22	57	155	80
Other countries .	157	61	107	325	48
Europe . . .	538	319	317	1,174	63
United States .	182	222	108	512	148
Total . . .	720	541	425	1,686	76

The aggregate value of the above manufactures consumed in Europe averages 2 pence a day per inhabitant; the ratio varies from 1 penny in Russia to 3 pence in France or Germany, and 4 pence in the United Kingdom per inhabitant. It would seem to be still higher in the United States, but if we deduct one-fourth the nominal value, for inflation of prices arising from a Protective tariff, we find that the ratio in that country is only 111 shillings, or 3½ pence daily.

¹ If we suppose the inflation of prices in the United States by the action of Protective tariffs to be, as already stated, 38 per cent. over the real value, the ratio of manufactures per operative will be £270, or three times the European average.

MINING

This age is specially remarkable for the development of subterranean industry, for while agriculture has only doubled, and manufactures have quadrupled, since 1840, the output of mining has multiplied thirteen-fold. The principal features of this industry are shown approximately since 1820 as follows:—

Year.	Hands.	Tons raised.	£ Value.	£ per Hand.
1820 .	250,000	28,100,000	17,800,000	70
1840 .	442,000	56,200,000	31,500,000	70
1860 .	1,016,000	182,600,000	76,000,000	75
1880 .	1,760,000	420,400,000	149,000,000	85
1894 .	3,130,000	746,000,000	302,000,000	96

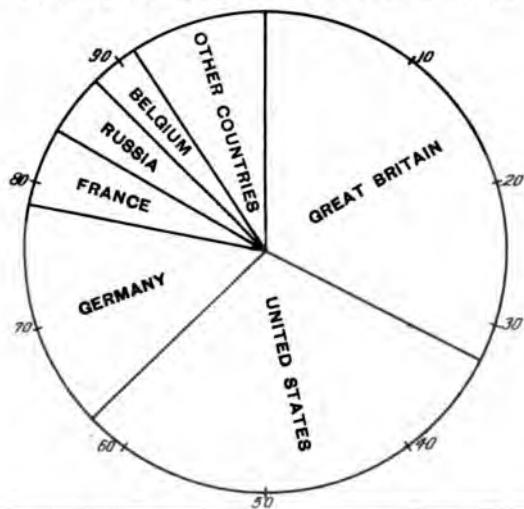
Coal constitutes 70, other minerals 30 per cent. of the total weight raised. Such progress has been made in machinery that the average output per miner is now 240 tons, as compared with 125 tons in 1840; thus, while the mines have gone deeper, we find that one man now raises as much mineral stuff as two could fifty years ago. In point of value no country approaches the United States, but in weight of mineral Great Britain is ahead. It may be said as regards weight, that Great Britain raises one-third, the United States one-third, and all other nations collectively one-third of the minerals of the world. The weight and value of minerals, and the number of miners, in 1894 were:—

	Million	Millions	Minera.	£ per Miner.	Tons per Miner.
	Tons.	£.			
Great Britain .	240	78	840,000	93	285
United States .	230	94	580,000	162	400 ¹
Germany .	115	34	400,000	85	287
France .	88	16	180,000	90	210
Other States .	123	80	1,180,000	71	110
Total .	746	302	8,130,000	96	240

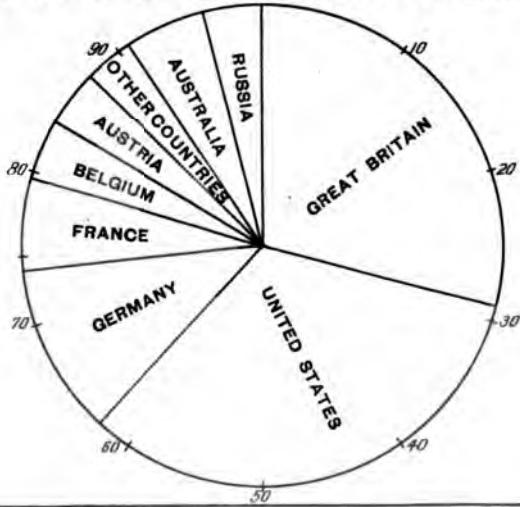
The money value of product per miner is higher in Great Britain than among other European nations, but is greatly

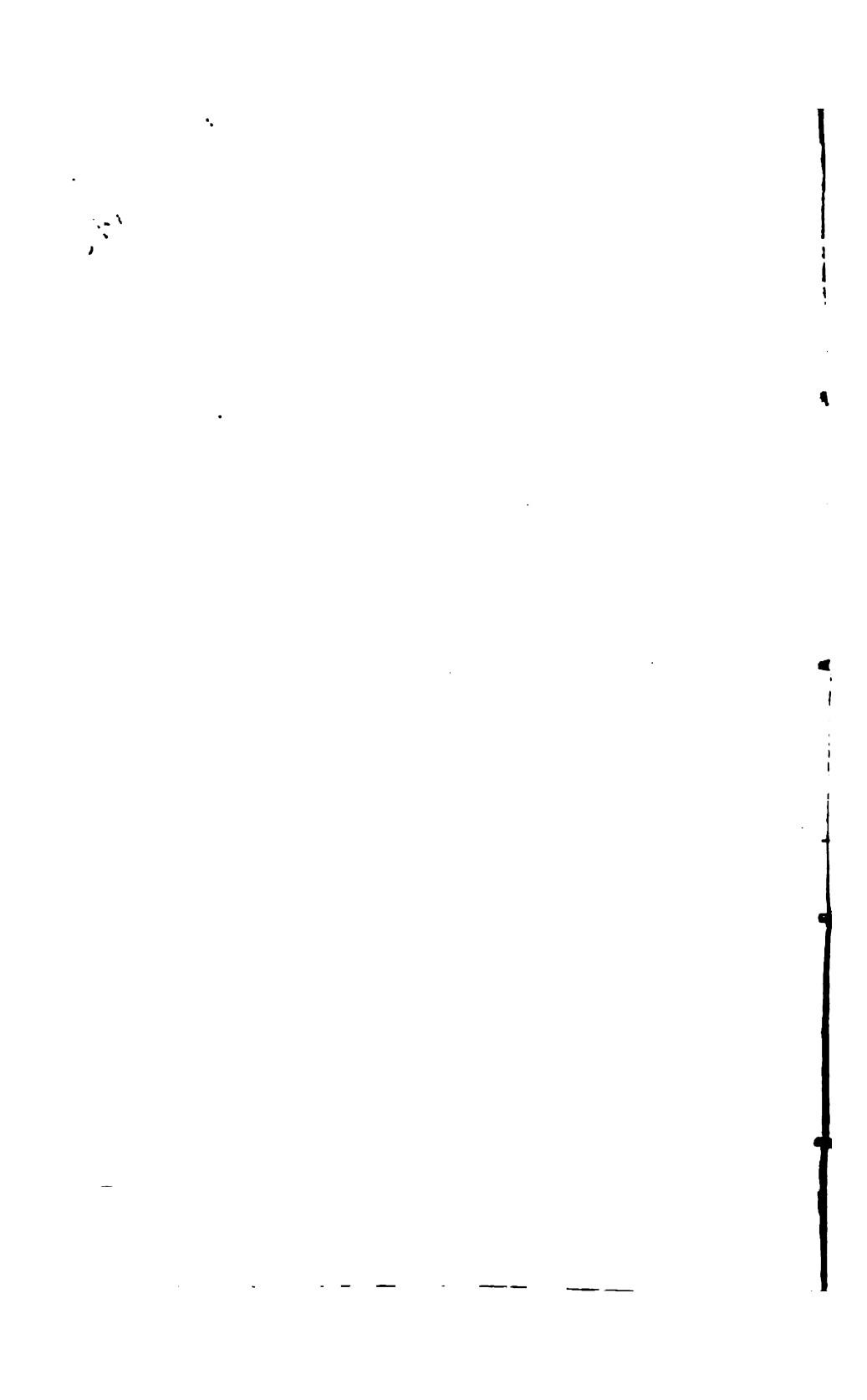
¹ The exact number of miners is not known. See chapter on Mining in the United States. The ratio in 1880 was even higher, viz., 440 tons per miner.

WEIGHT OF MINERAL RAISED YEARLY.



VALUE OF MINERAL PRODUCED YEARLY.





surpassed by the ratio in the United States, perhaps because in the latter country the difficulties of extraction are less.

Coal.—This is the great lever of industrial progress, and the production has grown thirty-fold since 1820, showing as follows:—

	1820.	1894.
Great Britain, tons . . .	12,500,000	188,300,000
United States, " . . .	500,000	152,500,000
Germany, " . . .	1,500,000	99,000,000
Other States, " . . .	2,700,000	91,200,000
Total . . .	17,200,000	581,000,000

The consumption of coal has quadrupled since 1860, and there is every indication that the demand will go on increasing. The supply, meantime, is practically inexhaustible, the British coalfields having enough to meet the requirements of all Europe, at the present rate, for 230 years, the German for 100 years, the United States for many centuries, without counting other countries, such as Canada, Australia, and China, where coal-mining is in its infancy.

Ironstone.—This mineral comes next in magnitude after coal, and has multiplied eight-fold in half-a-century, the output showing:—

	1840.	1894.
Great Britain, tons . . .	3,500,000	12,400,000
United States, " . . .	500,000	17,000,000
Germany, " . . .	400,000	12,400,000
Other States, " . . .	2,000,000	11,200,000
Total . . .	6,400,000	58,000,000

Miscellaneous ores, such as lead, copper, zinc, &c., make up an annual total of 7 million tons, from which are extracted about a million tons of metal.

Precious Metals.—The production of gold and silver in forty-four years was as follows:—

	Weight, Tons.		Value, Millions £.	
	Gold.	Silver.	Gold.	Silver.
1851-70 . . .	3,903	21,157	546	187
1871-90 . . .	3,340	54,087	467	412
1891-94 . . .	865	18,520	121	103
44 years . . .	8,108	98,714	1,134	702

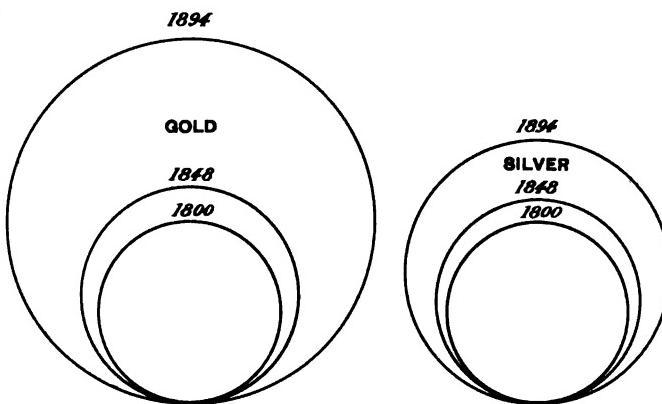
According to the tradition of the older class of bi-metallists the production of silver should be sixteen times the weight of that of gold, in order to maintain the equilibrium of value between the two metals. If this principle be admitted the production of gold since 1851 has been relatively excessive, that of silver short, the production of the latter to the former, in weight, having been only twelve to one. Hence, if the production of the two metals determined their value, silver ought to be now worth 33 per cent. more than in 1850, whereas, on the contrary, it has fallen 50 per cent. The countries which produced these metals since 1850 show thus :—

	Gold, Tons.	Millions £.		Silver, Tons.	Millions £.
United States .	2,878	= 402	United States .	30,350	= 217
Australia .	2,678	374	Mexico .	29,910	226
Russia .	1,877	193	South America .	13,410	103
Other States .	1,180	165	Other States .	20,044	156
Total . .	8,108	= 1,134	Total . .	93,714	= 702

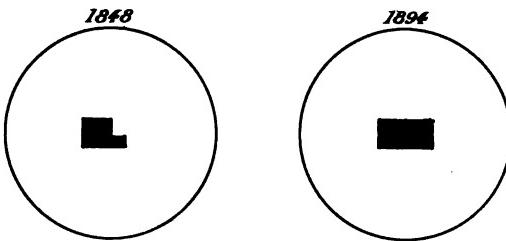
The production of gold and silver in the years 1891–94 gave an average exceeding the annual yield in any decade of the world's history, namely, 216 tons of gold and 4630 of silver. Even in the decade 1851–60, when California and Australia were in their apogee, the world's production of gold did not exceed 202 tons yearly. Everything indicates that the concluding decade of the century, 1891–1900, will surpass in this respect anything in the records of the human race. The production in 1894 was as follows :—

	Value, £.			Weight, Tons.	
	Gold.	Silver.	Total	Gold.	Silver.
United States .	8,200,000	6,100,000	14,300,000	59	1,540
Span. America .	8,200,000	9,900,000	18,100,000	23	2,480
Australia .	8,700,000	2,200,000	10,900,000	63	560
South Africa .	8,400,000	...	8,400,000	61	...
Russia .	5,700,000	...	5,700,000	42	...
Other States .	3,500,000	2,800,000	5,800,000	25	580
Total . .	37,700,000	20,500,000	58,200,000	278	5,160

Increase of Gold and Silver since 1800.



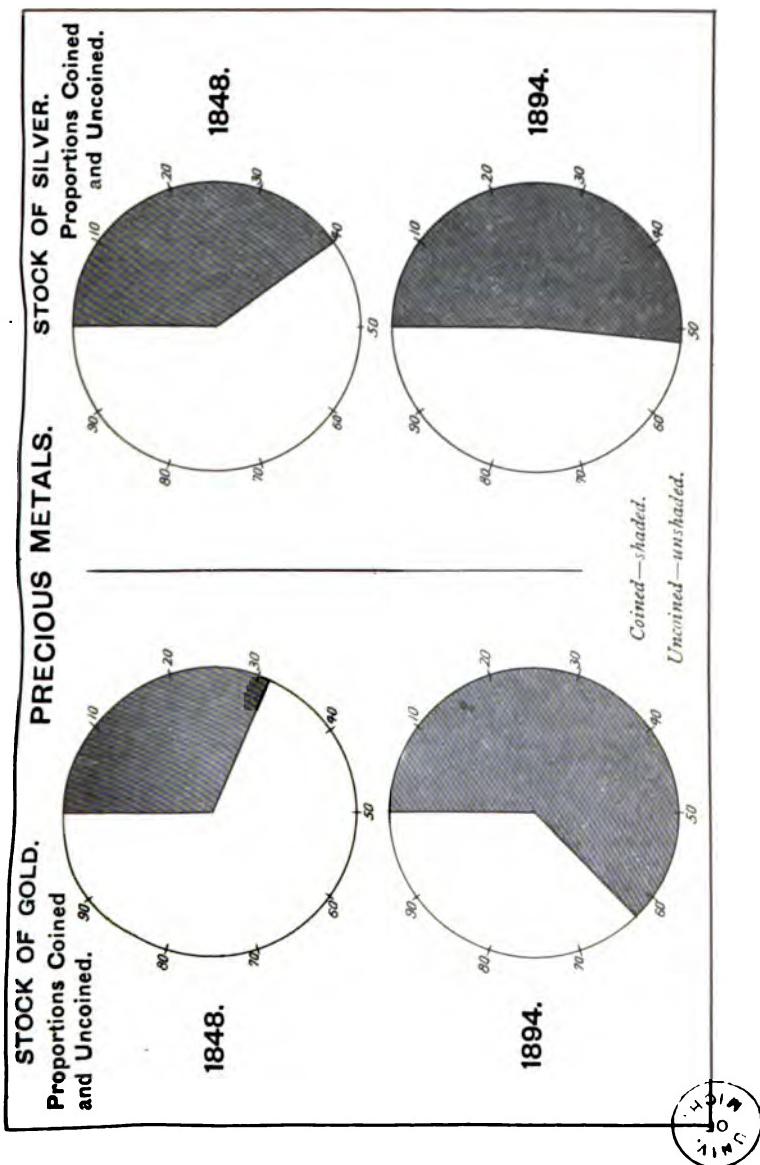
STOCK OF GOLD AND OF SILVER,
RELATIVE WEIGHT.

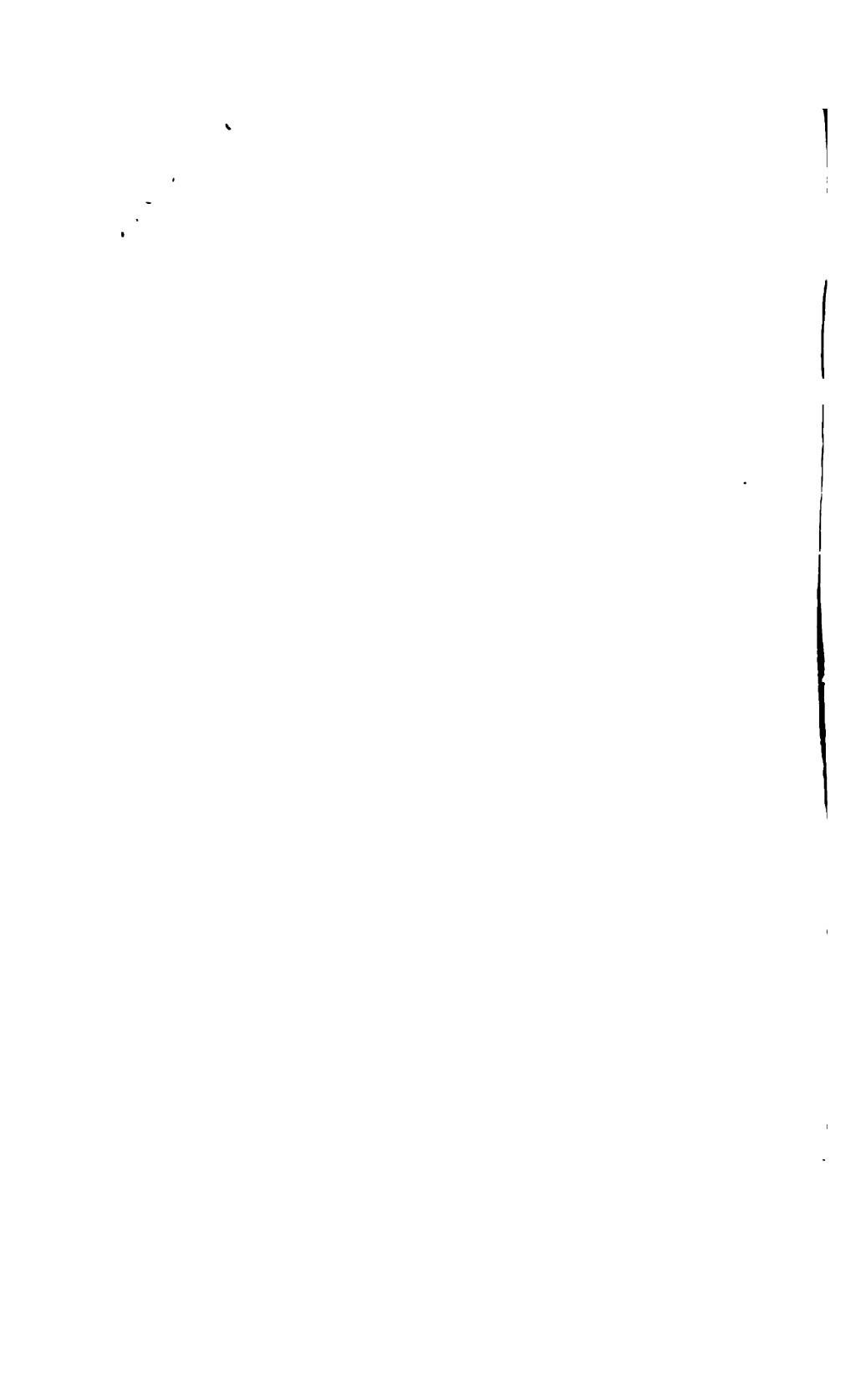


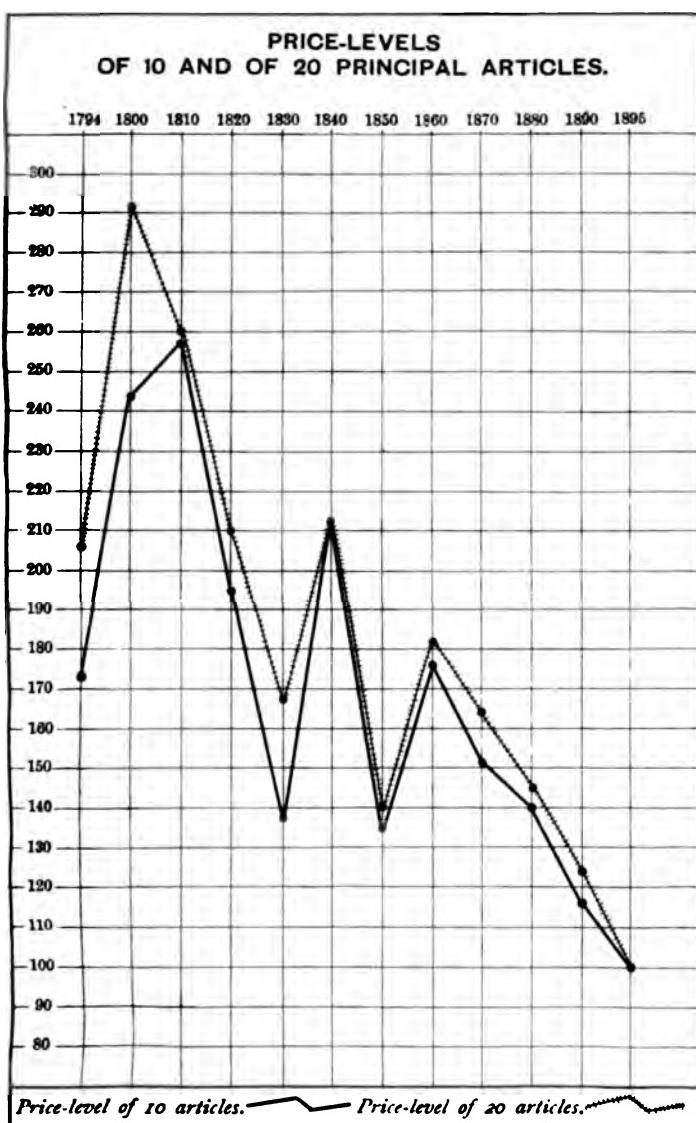
Gold—shaded. Silver—unshaded.



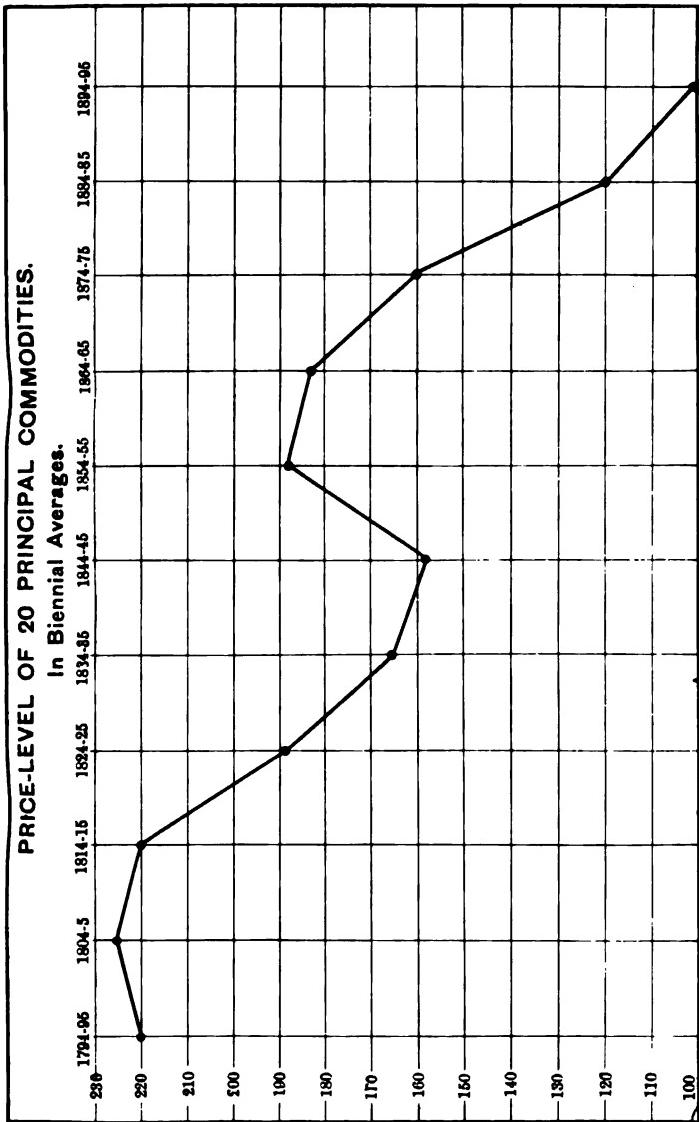








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There has been in recent years a remarkable increase in the production of silver, which now averages 5000 tons, whereas in twenty years, down to 1870, it averaged only 1050 tons yearly. Gold quartz varies so much in yield that no exact statement can be made of the quantity crushed, the product of gold being equivalent in Australia to 40 shillings, in Russia to 5 shillings, a ton. Silver ore usually gives £20 worth a ton. According to Soetbeer, and other eminent authorities, the manufacturing industries of the world consume yearly about 100 tons of gold, and 500 of silver. The stock of precious metals, coined and uncoined, at various dates was approximately as follows :—

	Gold, Tons.			Silver, Tons.		
	Coined.	Uncoined.	Total.	Coined.	Uncoined.	Total.
1800 . . .	908	1,822	2,730	42,000	46,000	88,000
1848 . . .	1,125	2,450	3,575	45,200	67,800	113,000
1894 . . .	5,840	3,460	9,300	92,000	89,000	181,000

The stock of silver compared to gold in 1848 was as thirty-two to one, whereas at present it is less than twenty to one, and yet silver has fallen 50 per cent. in price, a sufficient proof that the relative stocks of the two metals have no perceptible connection with their value as regards one to another.

In the mining product of the world the precious metals last year stood for 58 millions sterling, or one-fifth of the whole.

TRANSPORT

It is to the rapid increase of the means of transport by land and sea that the wonderful development of all industries in the last half-century is mainly due. The number of persons actually engaged in the carrying trade is over $8\frac{1}{2}$ millions, and (apart from passenger traffic) the value of goods handled is approximately 11,200 millions sterling, being an average of £1300 to each carrier. The number of carriers is approximately as follows :—

	By Rail.	By Sea. ¹	By Road, &c.	Total.
United Kingdom	230,000	520,000	440,000	1,190,000
Eur. Continent	1,350,000	840,000	3,740,000	5,930,000
United States.	870,000	120,000	330,000	1,320,000
Colonies .	90,000	30,000	80,000	200,000
Total .	2,540,000	1,510,000	4,590,000	8,640,000

The transport earnings in the various countries sum up a total of 1173 millions sterling, or £135 for each hand employed, which covers not only the wages of carriers, but also the maintenance of draught horses, and the numerous expenses on railways, shipping, &c., over and above wages. The earnings are shown approximately as follows:—

	Millions £ Sterling.			
	By Rail.	By Sea.	By Road, &c.	Total.
United Kingdom .	. 84	54	31	169
France .	. 56	5	66	126
Germany .	. 71	9	62	142
Russia .	. 35	3	70	108
Other countries .	. 73	18	171	262
Europe .	. 818	89	400	807
United States .	. 223	23	81	327
Colonies .	. 19	5	15	39
Total .	. 560	117	496	1,173

Railways and shipping perform at present the bulk of the carrying trade, the weight of merchandise carried by them having multiplied seven-fold in the last twenty-four years, viz.:—

Year.	Millions of Tons.		
	By Rail.	By Ship.	Total.
1860 .	. 222	45	267
1880 .	. 1,070	118	1,188
1894 .	. 1,790	176	1,966

The actual traffic by rail and ship is equal to 5,500,000 tons daily, in the transport of which, as we have seen, are employed

¹ This includes not only sailors on the high seas, but also those engaged in coasting, harbours, inland waters, &c.

4,050,000 men ; that is to say, each carrier of these two classes moves $1\frac{1}{2}$ ton daily. Taking the working year as 310 days, the sum paid daily for freight, in one or other form, is £3,800,000, by 193 million persons engaged in various industries : thus each worker in the human family of the civilised nations of Christendom pays 5 pence a day for freight, or one-tenth of the fruits of his industry. The number of carriers compared to other workers is as four to ninety, and the amount of capital employed in their calling represents 11 per cent. of the aggregate wealth of mankind, being approximately as follows :—

	Millions £.
Railways	6,745
Shipping	246
Horses, wagons, &c.	459
<hr/>	
Total	7,450

The capital represented by each hand employed in carrying is nearly £900 ; the wealth of all the rest of the world divided among the other workers (193 million hands) is only £320 each. The earnings of each carrier, as we have seen, average £135 a year ; those of the other workers of the world only reach £52 each. Hence it appears that the carrying trade shows a very high ratio of capital and earnings to the number of hands employed. This subject of transport is treated in further detail under the headings of Shipping and Railways.

COMMERCE AND SHIPPING

The international trade of the world has grown six-fold since 1840, the aggregate value of imports and exports of merchandise showing as follows :—

	Millions £ Sterling.					
	G. Britain.	France.	Germany.	U. States.	Other States.	Total.
1840 .	114	66	52	41	301	574
1894 .	682	277	346	322	1,678	3,805

The exports of one country become the imports of another, but in the latter form merchandise assumes a higher value, the difference being caused by freight, insurance, commission, &c. Thus in the decade 1871–80 imports appeared to exceed exports by 13½ per cent., but in the decade ending 1890 the excess was only 8 per cent. A reduction in freights and charges has been the cause, merchants being now able to work with a relatively smaller capital, since telegraphs facilitate business, and often save the necessity for shipments of specie. The weight and value of sea-borne merchandise at various dates were approximately as follows :—

Year.	Tons.	Millions £.	£ per Ton.
1840	14,700,000	266	18·1
1860	44,500,000	695	15·6
1880	112,800,000	1,435	12·7
1893	176,300,000	1,620	9·2

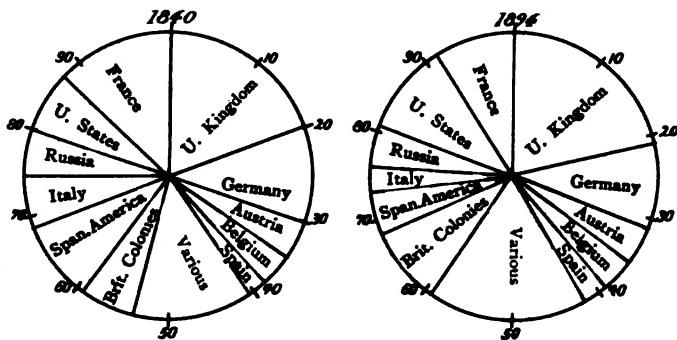
The average value of a ton of merchandise is now only half what it was fifty years ago, which means that a large portion of merchandise now exchanged among nations is relatively of so cheap a nature that in former times it would not have paid to carry it from one country to another, apart from the fact that since 1840 there has been a notable fall in prices. In order to measure the alterations of price-level, the method of index numbers has been for many years followed by various writers. If we take the prices in England of ten principal articles of merchandise (namely, beef, butter, coffee, copper, iron, silk, sugar, tallow, timber, and wheat), the aggregate for 1895 being represented by the figure 1000, the comparison with previous dates will be found to stand thus :—

1794 . . .	1,717	1830 . . .	1,371	1870 . . .	1,523
1800 . . .	2,440	1840 . . .	2,128	1880 . . .	1,400
1810 . . .	2,580	1850 . . .	1,351	1890 . . .	1,180
1820 . . .	1,938	1860 . . .	1,765	1895 . . .	1,000

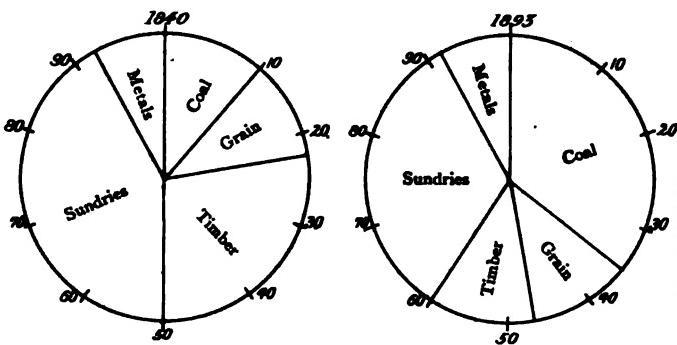
It appears from this table that 20 shillings will now buy as much as 28 would in 1880, or 42 in 1840. The above fall in prices is mainly the result of machinery and easier transport,

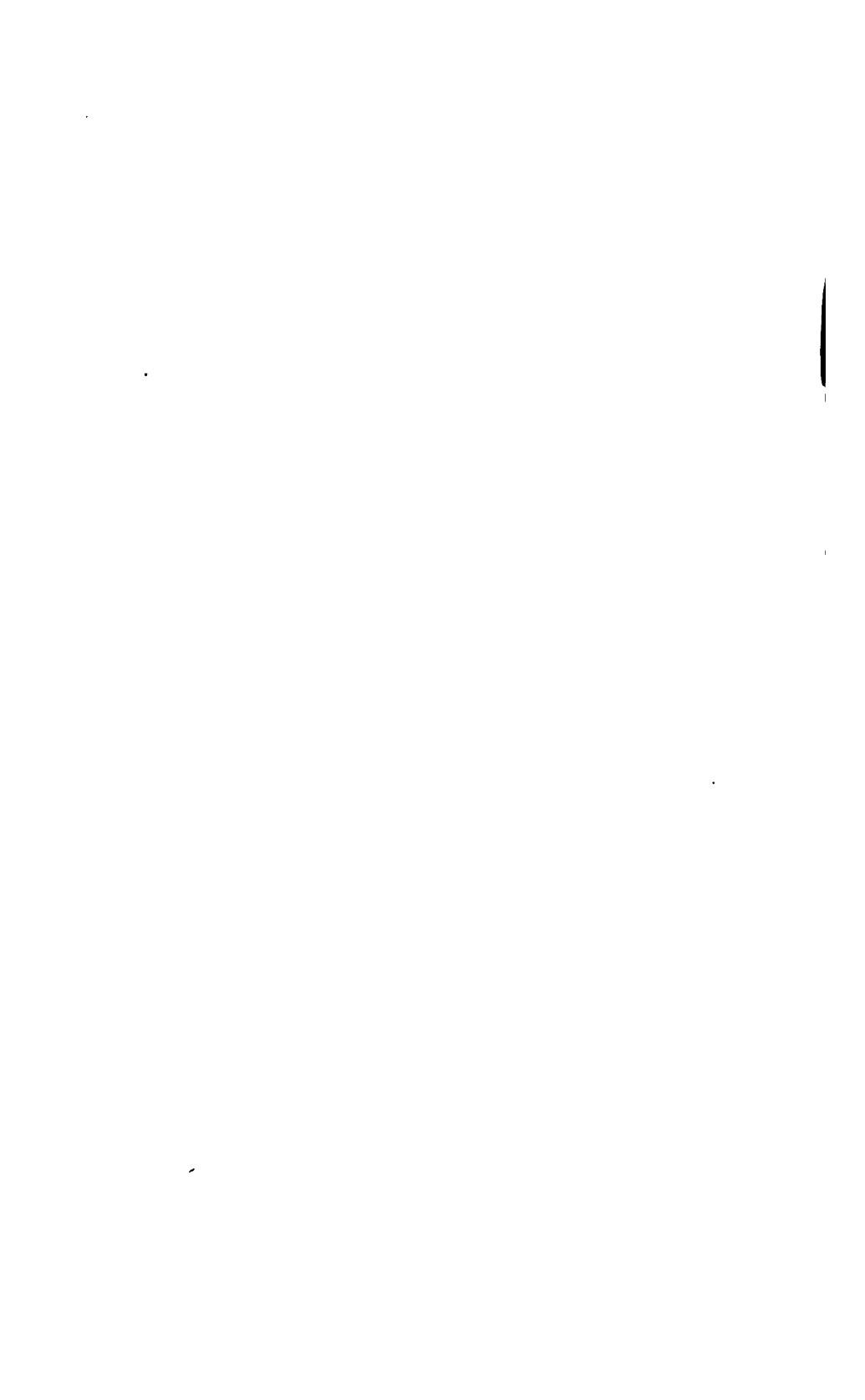
INTERNATIONAL COMMERCE.

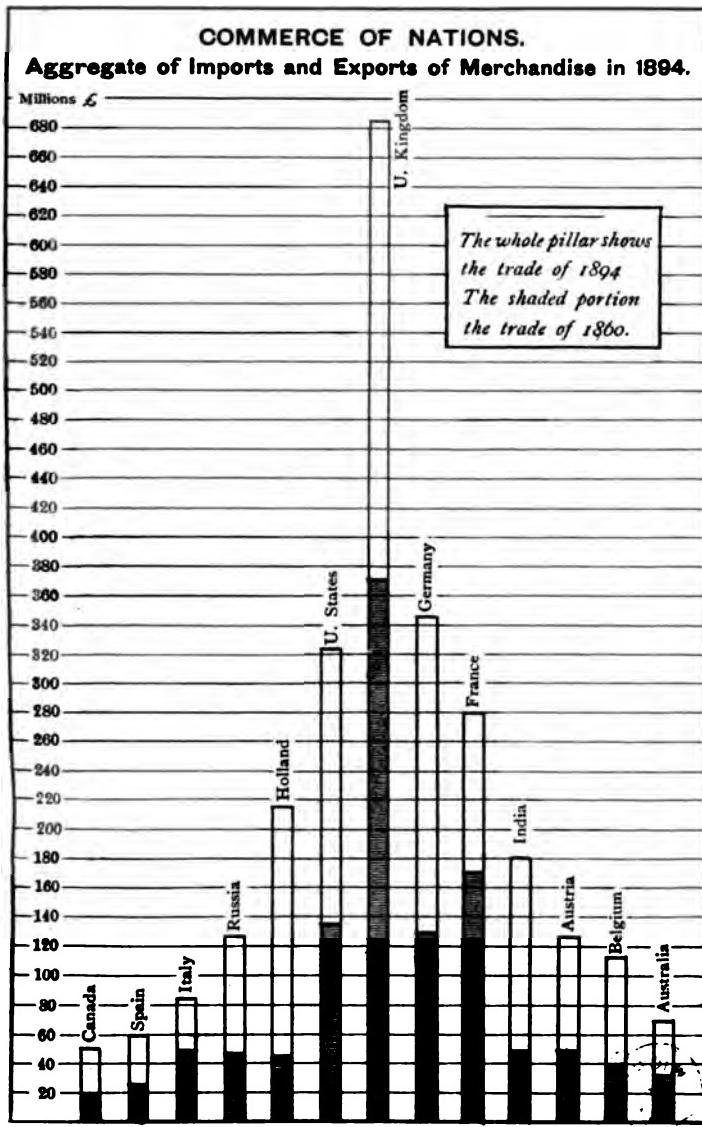
Proportions corresponding to Principal Nations.



Proportions of Sea-Borne Merchandise.









not an increased appreciation of gold, since we see that wages, salaries, and house-rents have risen in all countries since 1850.

The following table shows the articles of most bulk in sea-borne merchandise :—

	Tons.		
	1840.	1860.	1893.
Coal . .	1,400,000	10,800,000	61,000,000
Grain . .	1,900,000	4,800,000	24,100,000
Timber . .	4,100,000	5,600,000	18,600,000
Metals . .	1,100,000	8,200,000	12,400,000
Sundries . .	6,200,000	20,600,000	60,200,000
Total . .	14,700,000	44,500,000	176,800,000

Thus we see that four articles of relatively low value constitute two-thirds of the weight of merchandise exchanged between nations. If the imports and exports of nations be added together we shall have, of course, a sum representing more than double the value of merchandise exchanged. This value, as we have seen, was 1620 millions sterling in 1893; the annual average of trade in five years preceding, between imports and exports, was 3380 millions, the currents of trade between the various countries showing as follows :—

	Millions £ Sterling.					
	G. Britain.	France.	Germany.	U. States.	Other States.	Total.
Great Britain . .	... 67	56	140	465	728	
France . .	67	...	28	26	195	316
Germany . .	56	28	...	36	235	365
United States . .	140	26	86	...	148	350
Other States . .	465	195	235	148	588	1,631
Total . .	728	816	855	850	1,631	3,380

Great Britain stands alone in the magnitude of her trade, which is more than double that of any other country, the second place being closely contested by Germany, United States, and France. The preceding tables have reference only to merchandise. As regards the value of specie sent over sea, in the last thirty-four years, we find as follows :—

				Millions £ Sterling.		
				Gold.		
1861-70	.	.	.	512	474	986
1871-80	:	:	:	504	427	931
1881-94	.	.	.	788	486	1,174
84 years	.	.	.	1,754	1,887	3,091

The above includes all gold and silver, coined and uncoined ; the amounts imported and exported by the principal nations in the whole term of thirty-four years, according to official returns, were as follows :—

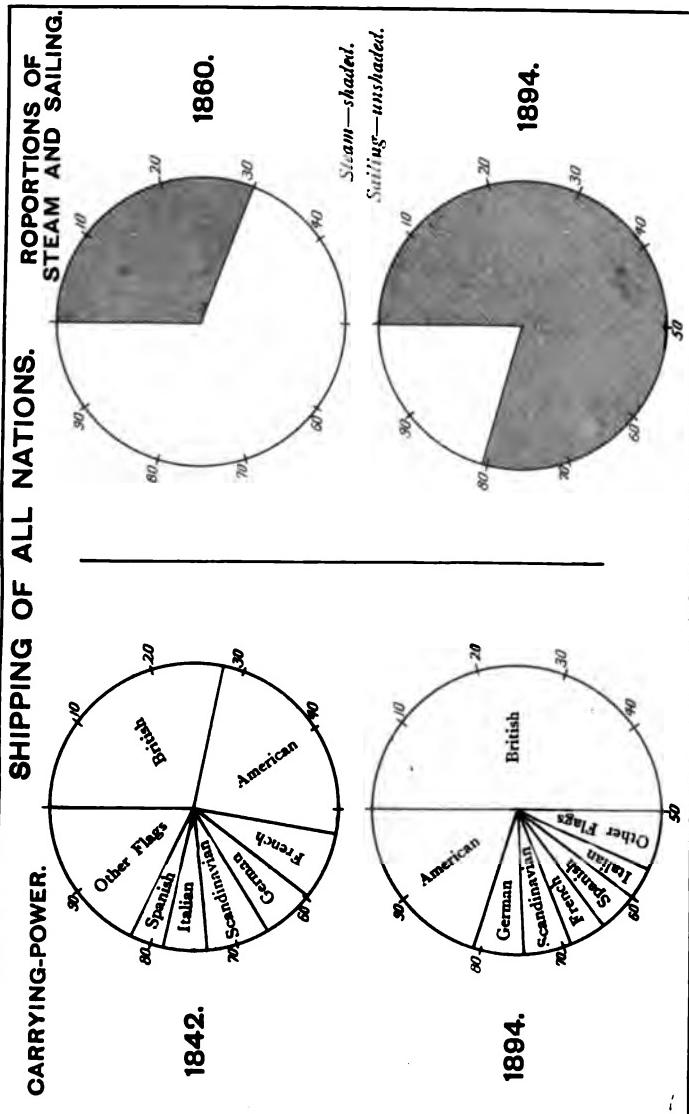
					Millions £ Sterling.
					G. Britain. U. States. France. Other States. Total. ¹
Imported	.	946	245	797	1,103 3,091
Exported	.	836	482	534	1,239 3,091

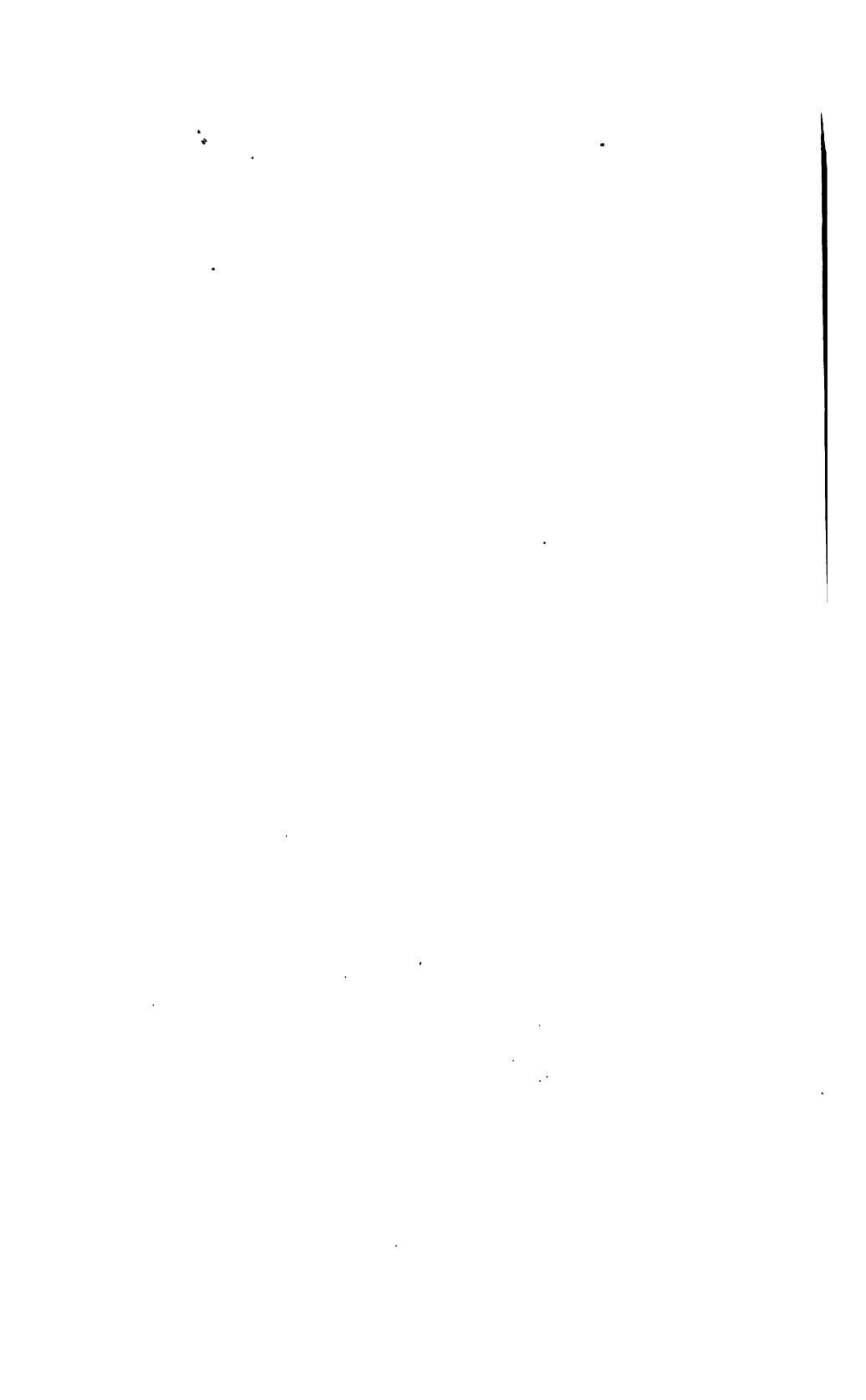
France and Great Britain have had a great influx of precious metals, the United States a large outflow. Among the other States it is worthy of notice that Australia exported 251 millions, Spanish America 261 millions, the former all gold, the latter four-fifths silver. On the other hand, India and China absorbed no less than 106 millions gold, and 551 millions sterling of silver. It is doubtless due to telegraphs that the amount of bullion, as compared with merchandise, sent over sea has declined in a remarkable manner, showing as follows in yearly averages :—

			Millions £ per Annum.		Specie Ratio.
			Merchandise.	Specie.	Per Cent.
1861-70	.	.	880	99	12
1871-80	:	:	1,216	98	8
1881-94	.	.	1,565	84	5½

Thus for all purposes of international commerce £45 in bullion now do as much work as £100 in the decade ending 1870, a fact which bi-metallists seem to overlook. For greater clearness on this point we may exclude silver, and take account only of sea-borne gold, the annual averages of which compare thus with merchandise since 1861 :—

¹ Detailed tables will be found in the Appendix.





		<u>Millions' £ per Annum.</u>		<u>Gold Ratio.</u>	<u>Per Cent.</u>
		<u>Merchandise.</u>	<u>Gold.</u>		
1861-70	.	880	51	6·1	
1871-80	:	1,216	50	4·1	
1881-94	:	1,555	52	3·3	

We see that while commerce has doubled since the decade 1861-70, the amount of gold sent over sea is unaltered, showing that one ounce of gold now serves as efficiently in international exchanges as two ounces did thirty years ago.

Shipping.—The registered tonnage of shipping on the high seas in 1894 was more than double the total in Lloyd's Register for 1840; the carrying-power has quintupled, viz. :—

	<u>Tons.</u>			
	<u>Steam.</u>	<u>Sail.</u>	<u>Total.</u>	<u>Carrying-power.</u>
1840	868,000	9,012,000	9,880,000	10,480,000
1894	10,150,000	10,100,000	20,250,000	50,700,000

In the computation of carrying-power a steamer of given tonnage is considered equal to four times the same tonnage of sailing-vessels, because it is found by ship-owners that a steamer makes three long-sea or ten short voyages for one of a sailing-vessel. The nominal tonnage and effective carrying-power of the sea-going merchant-navies in 1894 were :—

<u>Flag.</u>	<u>Nom. Tons.</u>	<u>Carrying-power.</u>	<u>Ratio.</u>
British . . .	10,380,000	29,560,000	58·2
Scandinavian . .	2,380,000	4,080,000	8·0
German . . .	1,550,000	4,220,000	8·8
United States ¹ . .	1,830,000	3,220,000	6·8
French . . .	890,000	2,360,000	4·7
Spanish . . .	680,000	2,120,000	4·2
Italian . . .	780,000	1,410,000	2·8
Various . . .	1,760,000	3,800,000	7·5
<u>Total</u> . . .	<u>20,250,000</u>	<u>50,720,000</u>	<u>100·0</u>

The annual increase of carrying-power in the merchant-navies of the world between 1880 and 1894 was 1 million

¹ This is only sea-going shipping; if vessels on internal waters were included, the United States merchant-navy would reach 4,680,000 tons register and 11,250,000 carrying-power.

tons, while the nominal tonnage showed no increase, because in those fourteen years sailing-vessels summing up 4,400,000 tons were lost or broken up, and their place was taken by steamers aggregating an equal tonnage, but representing 18 million tons of carrying-power. This change still goes on, Lloyd's Register showing the nominal tonnage of vessels built in Europe and America in 1894 as follows:—

	Steamers.	Sailing.	Total, Tons.
British . . .	965,000	82,000	1,047,000
Other flags . . .	203,000	74,000	277,000
Total . . .	1,168,000	156,000	1,324,000

In the preceding tables British includes also Colonial shipping, the latter constituting 13 per cent. of nominal tonnage, and 9 per cent. of carrying-power, of the British merchant-navy. It is often asserted that there are too many vessels afloat for the commerce of the world, but the assertion is at best doubtful. There are many steamers with antiquated machinery, which it is not found convenient to employ in trade; but the ratio of entries in ballast, which may be considered a fair test, shows no increase since 1882. The following table shows the total port-entries in Europe and the United States, and the entries in ballast:—

	Entries, Tons.	Ballast, Tons.	Ratio per Cent.
1882 . . .	112,690,000	22,100,000	20
1892 . . .	146,800,000	29,800,000	20

The merchant-navies of the world (exclusive of fishing-boats) represent an approximate value of 246 millions sterling, of which British (excluding Colonial) stands for 108 millions.

Internal Trade.—This is the real trade of a country, comprising the total value of agricultural, manufacturing, and mining products handled by the people, and the value of imported goods from foreign countries that are consumed. The amounts in 1894 were approximately as follows:—

	Millions £ Sterling.					
	Agriculture.	Manufactures.	Mining.	Forestry, &c.	Imports.	Total.
United Kingdom . . .	230	876	78	9	417	1,610
France . . .	416	596	16	19	154	1,201
Germany . . .	417	690	84	14	198	1,353
Russia . . .	540	380	12	42	56	1,030
Other States . . .	962	1,024	29	56	437	2,608
Europe . . .	2,565	8,566	169	140	1,262	7,702
United States . . .	813	1,952	94	130	186	3,125
British Colonies . . .	127	158	19	26	52	382
Total . . .	8,505	5,676	282	296	1,450	11,209

The above table shows at a glance the merchandise produced yearly by nations, but it will be observed that the column of imports is a repetition, and that the actual value of merchandise is 9759 millions. Of this amount 85 per cent. is kept for home use, namely, 8419 millions, and 1340 millions are exported, which latter acquire 8 per cent. additional value by transport and trade, and figure as 1450 millions in the above table under the column of imports.

RAILWAYS

These may be considered a distinctive feature of the second half of the century, although a few were made in the first half. The total length in traffic in 1850 was only 23,500 miles, and since then nearly 400,000 miles have been constructed, at an average annual outlay of 140 millions sterling. The progress in the various parts of the world since 1860 is shown in the number of miles open then and now, viz. :—

	Miles.		Cost, Millions £.	
	1860.	1894.	1860.	1894.
Europe . . .	31,890	150,530	797	3,499
America . . .	33,040	224,880	268	2,770
Asia . . .	840	23,660	8	249
Africa . . .	270	7,440	4	88
Australia . . .	250	13,620	2	139
Total . . .	66,290	420,180	1,079	6,745

46 *INDUSTRIES AND WEALTH OF NATIONS*

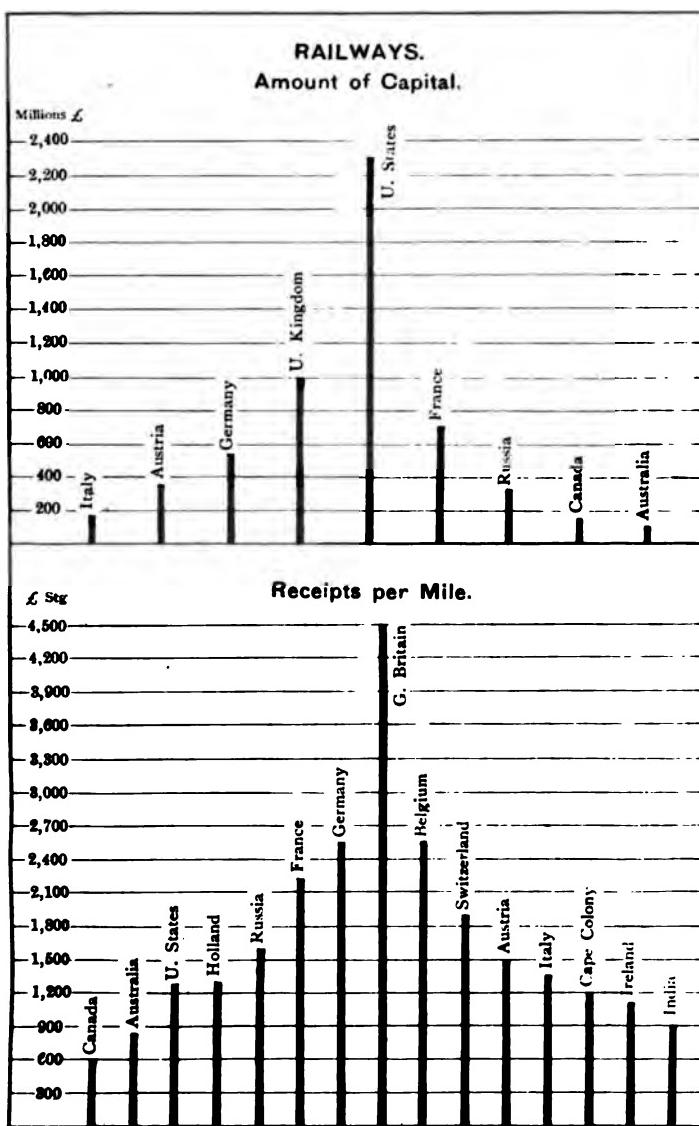
At present the cost of all existing lines shows an average of £16,000 a mile, and the actual rate of construction, judging by the last five years, is about 10,200 miles per annum, the amount of capital expended in making new lines averaging £500,000 a day. Working expenses take almost two-thirds of the gross receipts, and the net profit, for the whole world, is a little over 3 per cent. on the cost of construction, in Europe reaching 3½ per cent., viz. :—

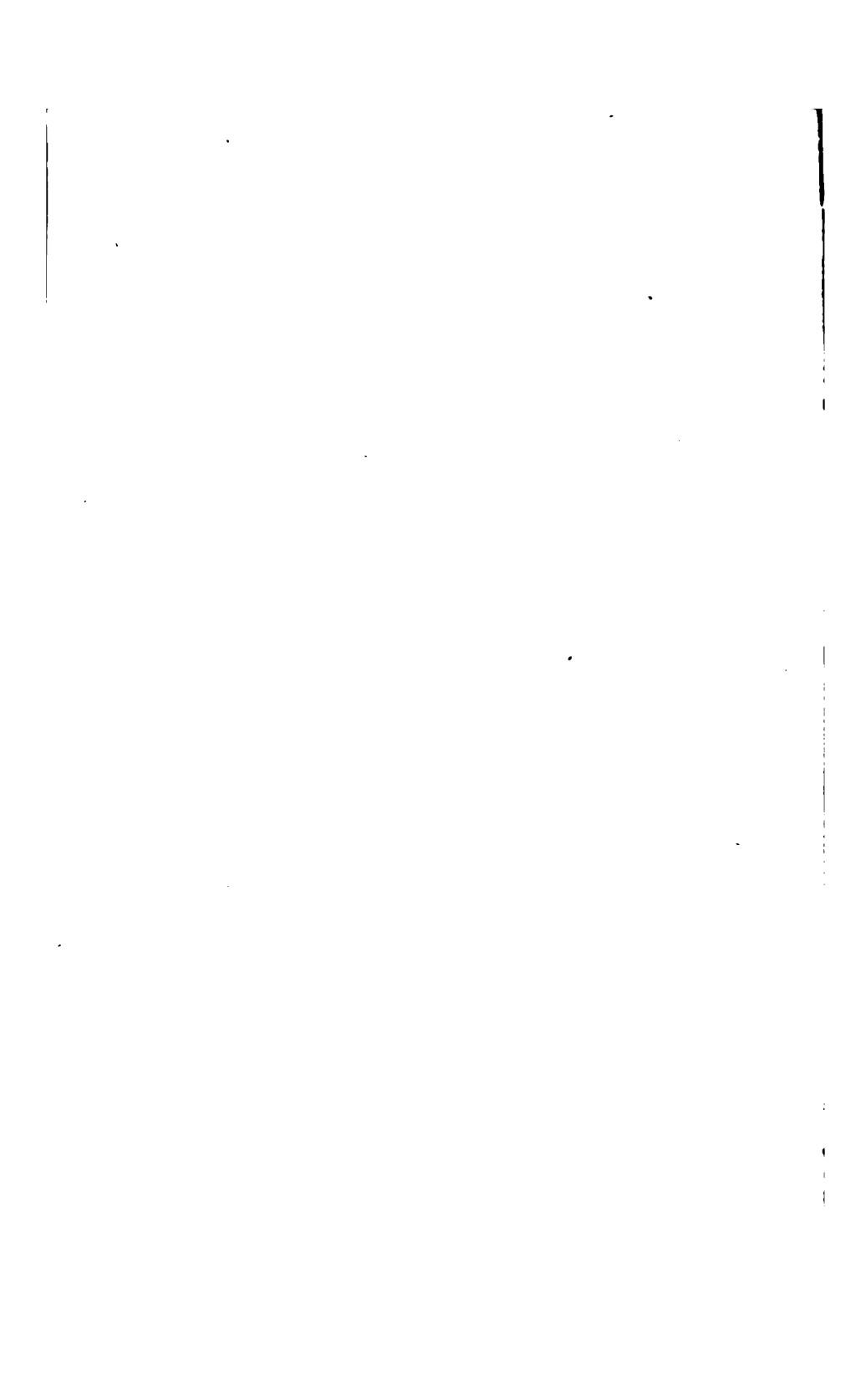
	Millions £ Sterling, per Annum.			Profit on Capital.
	Receipts.	Expenses.	Profit.	
Europe . . .	318	196	122	3·5
North America . . .	238	170	68	3·0
South America . . .	17	13	4	1·8
Asia . . .	20	11	9	3·6
Africa . . .	8	5	3	3·6
Australia . . .	9	6	3	2·7
Total . . .	610 ¹	401	209	3·1

The total railway capital in 1894 reached 6745 millions sterling, a sum much greater than the aggregate of public debts, and equal to 10 per cent. of the total wealth of mankind. The benefit resulting from railways is not merely a dividend of 3½ or 4 per cent. to shareholders. It is computed in Germany that each mile of railway causes a yearly saving of £6300 to the public, which is equal to a dividend of 32 per cent. on the cost of construction. In other countries it is usual to compare the amounts now paid for freight of goods by rail with what the old charges by team would have come to; the result in 1894 would have been as follows :—

	Millions £ Sterling.		
	Railway.	Team.	Saving.
United Kingdom . . .	46	201	155
Continent . . .	162	973	811
United States . . .	166	1,420	1,254
Colonies . . .	18	79	66
Total . . .	387	2,673	2,286

¹ These are the earnings for the whole world, but the railway earnings of the twenty-four countries that form the scope of the present work are only 560 millions sterling, as shown at page 88, in treating of transport.





This shows an annual saving of 2286 millions sterling in the above countries, equal to a dividend of 38 per cent. on the sum spent (6000 millions) in the construction of their railways. There are in active service 110,000 locomotives, with an aggregate power of 32 million horses, and 2,540,000 men. The life of a locomotive is fifteen years, in which time it will run 270,000 miles, carry 900,000 passengers or 600,000 tons of merchandise, and earn £80,000; its ordinary power is 300-horse, and its first cost £2000. The rails on existing lines sum up 62 million tons, 75 per cent. of steel, which rail is 10 per cent. lighter than iron and has 150 per cent. more durability, the life of an iron rail being sixteen, of a steel one forty, years. The annual consumption of rails reaches 4 million tons, equally divided between the laying of new lines and the replacing of old rails. The saving in the wear-and-tear of rails by the introduction of steel amounts to 1,600,000 tons yearly, worth 6 millions sterling, which adds 2½ per cent. to annual profits; in other words, where a shareholder formerly received a dividend of £200 he ought now to receive £205. If we reduce the goods traffic of all countries to a common denominator, that is a mean haulage of 100 miles, we find that the daily traffic in 1893-94 was as follows:—

	Tons.	Lbs. per Inhab.		Tons.	Lbs. per Inhab.
U. States . . .	2,840,000	95	Austria . . .	180,000	10
Germany . . .	470,000	21	Russia . . .	150,000	4
U. Kingdom . . .	340,000	19	Belgium . . .	50,000	18
France . . .	280,000	17	Italy . . .	45,000	4

The total haulage, on the mean of 100 miles, amounted to 4,530,000 tons daily, the United States standing for almost two-thirds. The only country in Europe which surpasses Great Britain in goods traffic per inhabitant is Germany, and close upon our heels come Belgium and France. So prodigious is the goods traffic in the United States, that the railways carry every day in merchandise a weight exactly equal to what the whole population of 70 million persons would amount to if they could all be placed in a single train.

48 INDUSTRIES AND WEALTH OF NATIONS

The increase of railway traffic in recent years is shown as follows :—

	Millions of Passengers. Goods, Million Tons.			
	1860.	1894.	1860.	1894.
United Kingdom	180	912	82	325
France	57	837	22	97
Germany	48	522	24	242
Belgium	17	97	7	45
Austria	12	199	7	215
Other States	26	225	8	144
Europe	889	2,292	150	1,068
United States	60	541	70	688
Other countries	14	302	2	84
Total	413	8,135	222	1,790

The railway traffic of the world in 1894 averaged 10 million passengers, and 6 million tons of merchandise daily; the receipts averaged 14 pence per passenger, and 55 pence per ton of goods carried.

As regards the amount of railway capital to population, we find as follows :—

	£ per Inhab.		£ per Inhab.		£ per Inhab.
Canada	86	France	17	Austria	9
Australia	33	Belgium	12	Italy	6
United States	32	Germany	11	Spain	6
United Kingdom 25		Holland	10	Russia	3

Although Canada, Australia, and United States show a higher ratio than the United Kingdom, it must be borne in mind that a great portion of their lines was made with British capital.

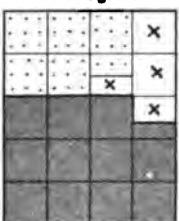
BANKS AND MONEY

Banking-power multiplied eleven-fold in half-a-century, showing as follows :—

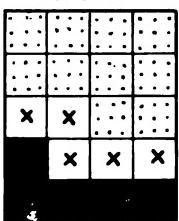
	Millions £ Sterling.						
	G. Britain.	U. States.	France.	Germany.	Other States.	Total.	
1840	132	90	16	12	58	308	
1894	960	1,030	356	231	760	3,837	

MONEY.

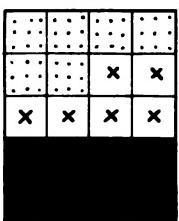
U. Kingdom



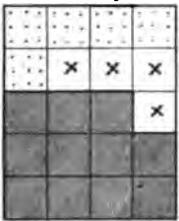
U. States



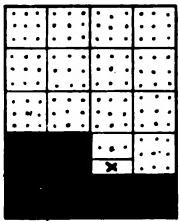
France



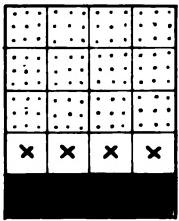
Germany



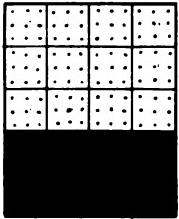
Russia



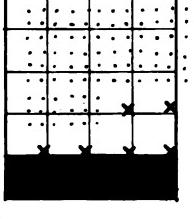
Austria



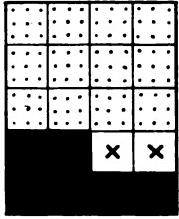
Italy



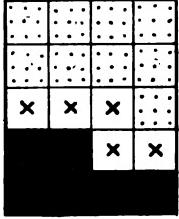
Spain



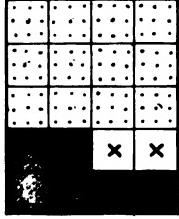
Scandinavia



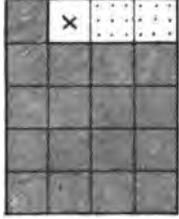
Belgium

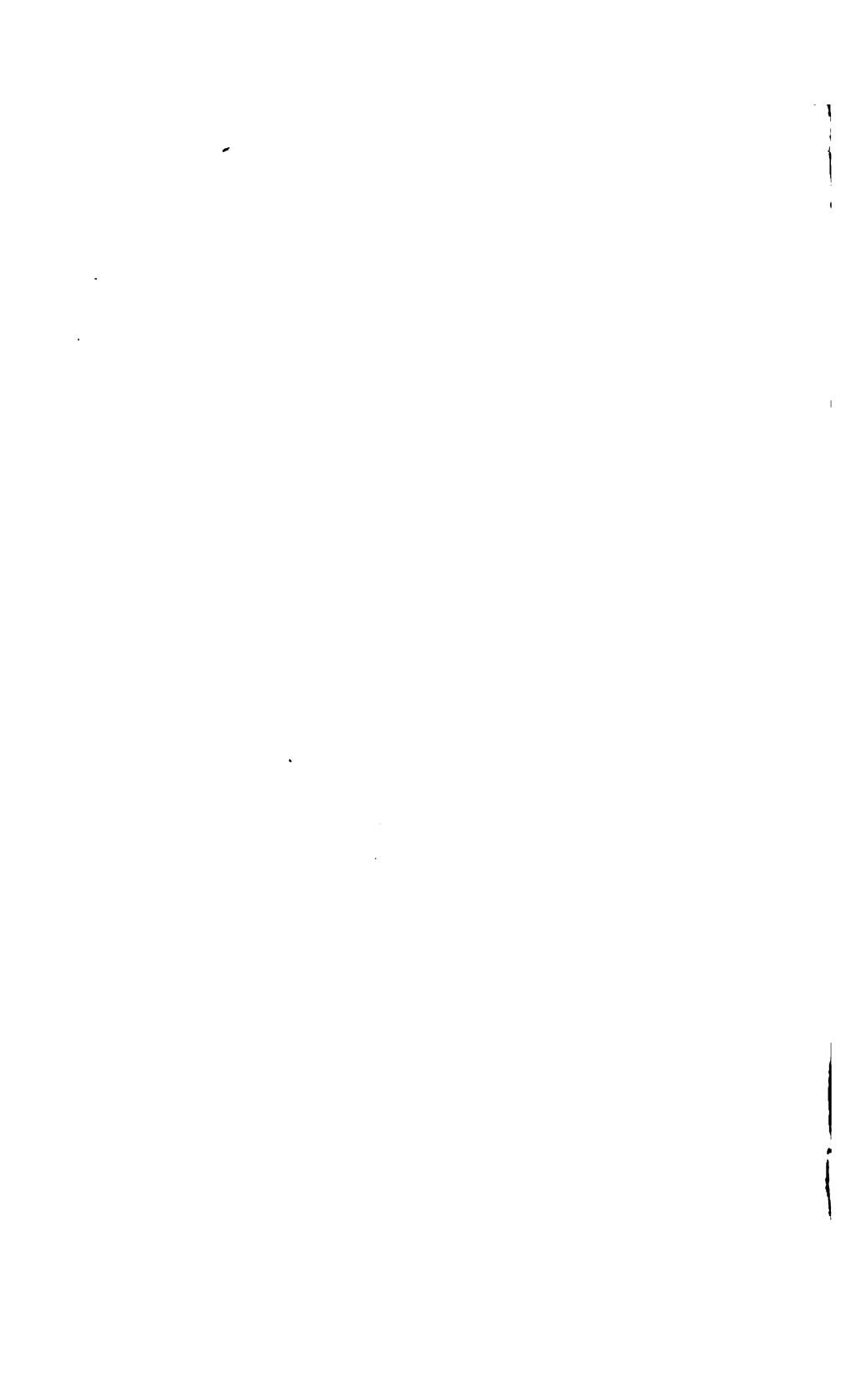


Canada



Australia

*Gold**Silver**X X X**Paper*



We have already seen that in the above interval manufactures only quadrupled and international commerce hardly increased six-fold, from which it appears that banking has outstripped other branches of business in its rate of progress. The rapid increase of banking in later times may be seen in the fact that the specie reserve of the great banks of Europe and United States rose from 154 millions in 1870 to 450 millions sterling in 1890.

Money.—The amount of money in use has by no means increased in the same degree as banking or commerce, since cheques and bills have in a great measure come to supply its place. Money has in fact not trebled since 1848, showing as follows in millions £:—

	Gold.	Silver.	Paper.	Total.
1848 . . .	157	388	260	805
1895 . . .	822	707	775	2,804

The above is exclusive of “dishonest” money, that is inconvertible notes, common in Russia, Italy, and South America. The currency above stated in 1895, according to Mr. Probyn, showed as follows in millions sterling:—

	Gold.	Silver.	Paper.	Total.
In Bank . . .	446	232	105	783
Circulation . . .	876	475	670	1,521
Total . . .	822	707	775	2,804

Of *bond-fide* money in circulation about 56 per cent. is coin, 44 per cent. paper, and the specie reserves held in banks and government offices are more than the total convertible notes in circulation. The money in use in certain countries is shown as follows in millions £:—

	Gold.	Silver.	Paper.	Total.	£ per Inhab.
United Kingdom . . .	85	24	41	150	3·8
France . . .	187	140	140	467	12·0
United States . . .	180	131	248	501	7·5
Germany . . .	182	45	61	288	4·8
Other States . . .	288	367	290	945	3·1
Total . . .	822	707	775	2,804	4·1

50 *INDUSTRIES AND WEALTH OF NATIONS*

Although Great Britain is by far the richest country in Europe, the most commercial, and that which possesses the greatest banking power, the amount of money which she uses is relatively very small, hardly one-third of the sum per head that is used in France, and only half of the ratio in the United States.

It may be more to the purpose to compare the internal trade of countries with the amount of money in circulation, viz.:—

	Internal Trade.	Money.	Ratio of Money.
United Kingdom	1,619	150	9·4
France	1,201	467	39·0
Germany	1,353	288	17·6
Austria	733	119	16·2
United States	8,125	504	16·1
Canada	205	18	6·3
Australia	177	34	19·2

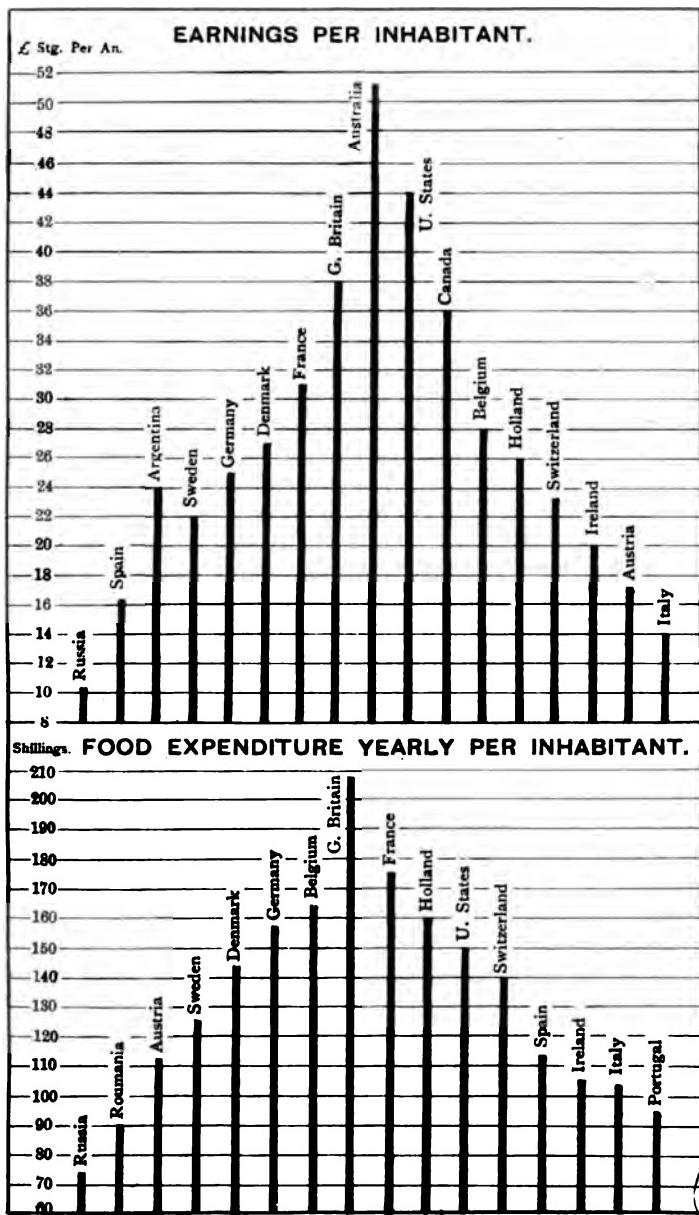
The following table shows in aliquot parts how the money of the principal countries is composed :—

	Gold.	Silver.	Paper.	Total.
United Kingdom	567	160	273	1,000
France	400	800	300	1,000
Germany	555	190	255	1,000
United States	258	260	482	1,000
General summary	857	807	886	1,000

The preponderance of gold in Great Britain and Germany is remarkable, while the volume of paper money in the United States is nearly double the stock of gold.

EARNINGS AND WEALTH

The following table shows approximately the earnings of nations in 1894. For greater convenience it is necessary to include Mining, Forestry, and Fisheries in one column ; in like manner Commerce comprises both trade earnings and transport, and the item of Professions includes also Domestics and the Public service ; but all these items will be found set out separately in the chapters that treat of the several countries in their order :—





Millions £ Sterling.

	Agriculture.	Manufactures.	Mining, &c.	Commercial.	House-rents.	Professions, &c.	Total.
U. Kingdom .	188	438	87	330	150	280	1,423
France .	250	298	85	246	118	252	1,199
Germany .	250	345	48	277	92	272	1,284
Russia .	824	190	54	211	47	178	1,004
Austria .	192	164	28	149	37	187	707
Italy .	122	95	8	92	27	92	436
Other States .	264	252	49	272	62	190	1,089
Europe .	1,540	1,782	309	1,577	533	1,401	7,142
United States	488	976	224	640	267	521	3,116
Canada .	84	49	26	41	7	26	183
Australia .	42	30	19	36	21	46	194
Total .	2,104	2,837	578	2,294	828	1,994	10,685

It will be observed that in the United Kingdom agricultural earnings are less than 10 per cent. of the total, whereas in other countries they usually stand for 20 or even 30 per cent.

Wealth.—The aggregate wealth of nations is almost 70 milliards sterling, or six times as much as the earnings. Real estate (that is lands and houses) represents 32½, personal property 37½, milliards; in other words, real estate forms 46 per cent., personal property 54 per cent., of the total. The principal items are shown approximately as follows:—

Millions £ Sterling.

	Land.	Cattle, &c.	Houses.	Rail- ways.	Merchan- dise.	Sundries.	Total.
U. Kingdom .	1,686	891	2,490	985	805	5,449	11,806
France .	2,580	518	2,159	668	601	3,174	9,690
Germany .	1,977	581	1,755	555	677	2,557	8,052
Russia .	2,118	597	1,019	349	515	1,832	6,425
Austria .	1,473	324	719	371	367	1,258	4,512
Italy .	1,180	219	508	184	223	851	3,160
Other States ¹ .	2,803	548	1,189	392	666	2,102	7,695
Europe .	18,812	8,118	9,834	3,499	3,854	17,223	51,340
United States	8,314	828	4,446	2,260	1,568	3,939	16,350
Brit. Colonies ²	466	281	319	325	191	547	2,079
Total .	17,592	4,177	14,599	6,084	5,608	21,709	69,769

¹ These States are given in detail in the Appendix.² Canada and Australia only.

52 INDUSTRIES AND WEALTH OF NATIONS

The United Kingdom stands for almost one-fourth of the wealth of Europe, although it has only one-ninth of the population. The United States hold the foremost place as to amount of earnings and of wealth, but the ratios of wealth to population are higher in the United Kingdom, Australia, and France, viz. :—

	£ per Inhabitant.		£ per Inhabitant.	
	Earnings.	Wealth.	Earnings.	Wealth.
United Kingdom	36	302	Canada .	36 196
Australia . . .	46	256	Germany . . .	26 156
France . . .	31	252	Austria . . .	17 104
United States . . .	44	234	Italy . . .	14 101

Daily earnings average about 30 pence per inhabitant in Australia and United States, 24 pence in the United Kingdom and Canada, 20 pence in France, 16 pence in Germany, 11 pence in Austria, and 10 pence in Italy.

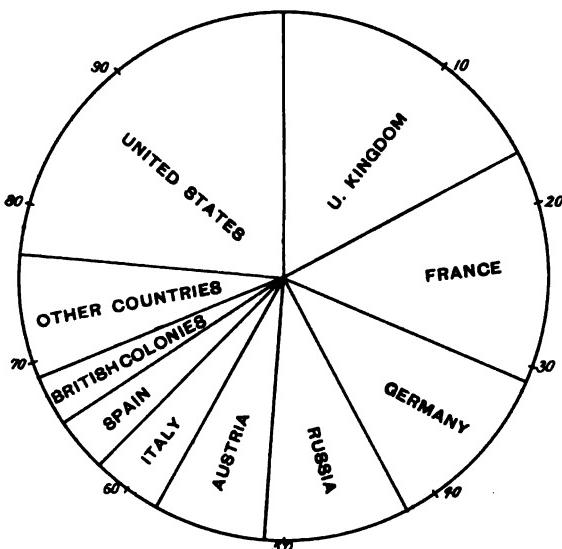
FINANCES

The increase of public revenue and expenditure since 1830 has been much greater than that of population, but much less than that of commerce or manufactures. The revenues are shown at the two periods thus :—

	Millions £ & Stg.		Millions £ & Stg.	
	1830.	1895.	1830.	1895.
United Kingdom .	55	102	Austria . . .	18 97
France . . .	41	128	Italy . . .	12 67
Germany . . .	16	163	Spain . . .	9 30
Russia . . .	23	112	United States . . .	3 81

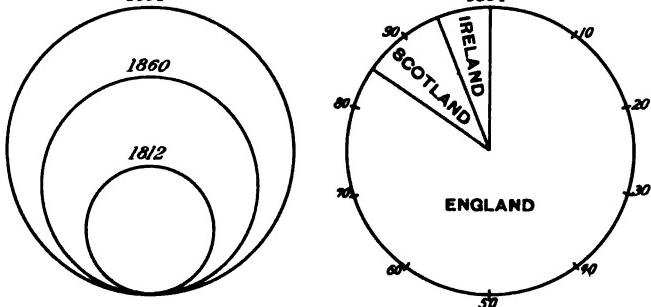
The aggregate revenue of the above eight countries more than quadrupled, rising from 177 millions in 1830 to 780 millions in 1895 ; but it must not be supposed that taxation quadrupled, a large portion of revenue in 1895 arising from State railways, which had no existence in 1830. Excluding State railways, the revenues in 1895 and the ratio per inhabitant were as follows :—

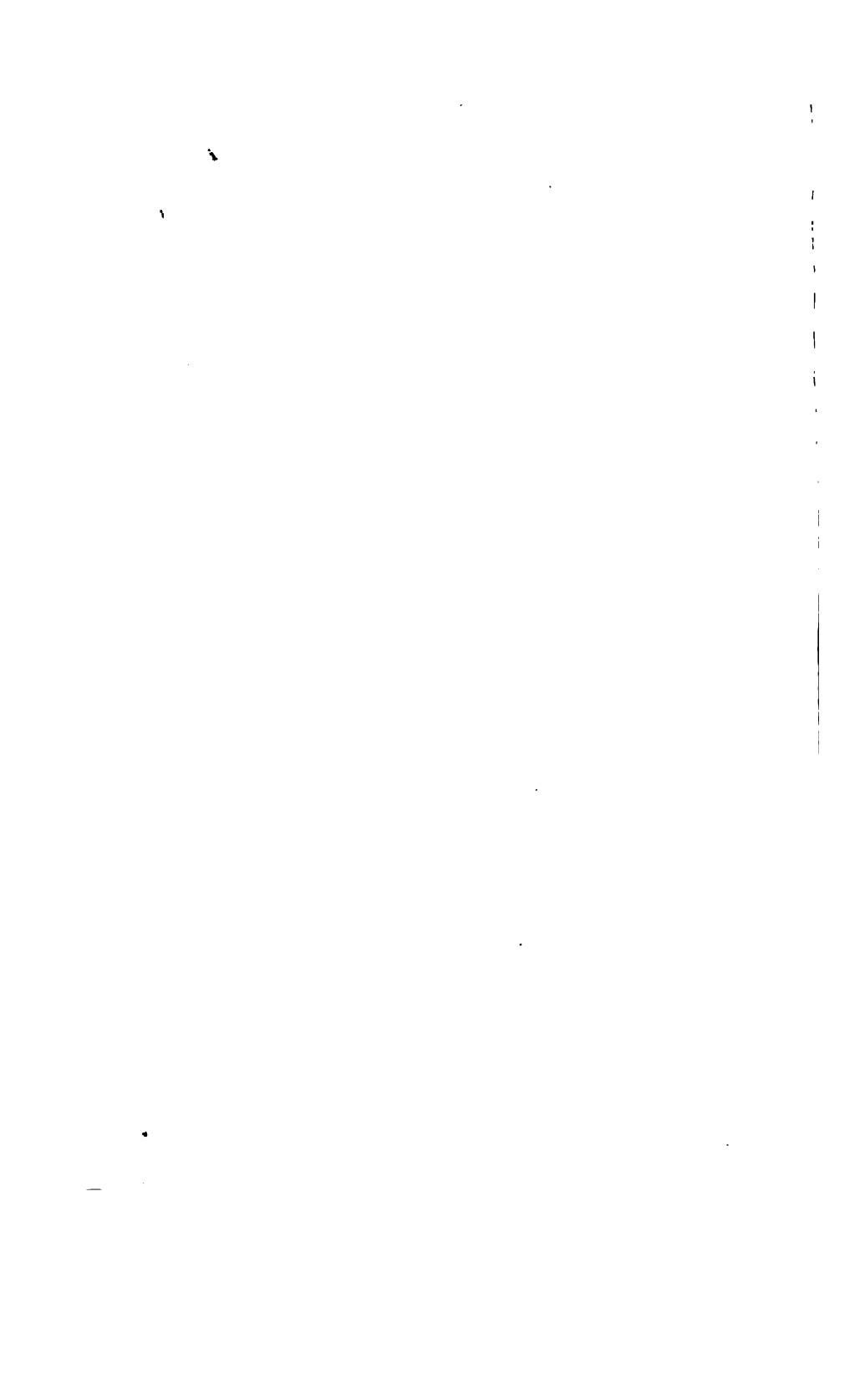
WEALTH OF NATIONS
(In 1894.)



The British Colonies in the above figure include only Australia and Canada.

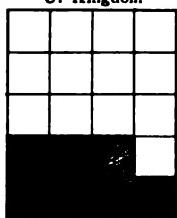
WEALTH OF UNITED KINGDOM.



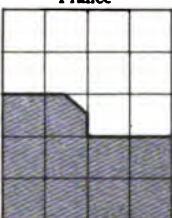


WEALTH OF NATIONS.
Proportions of Real and Personal Property.

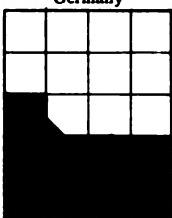
U. Kingdom



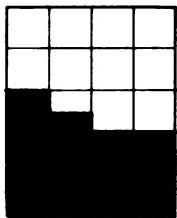
France



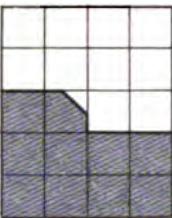
Germany



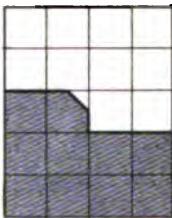
U. States



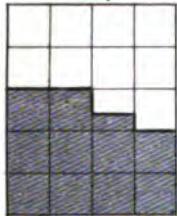
Russia



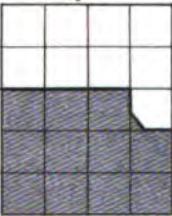
Austria



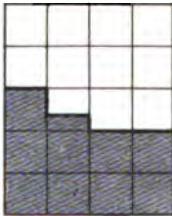
Italy



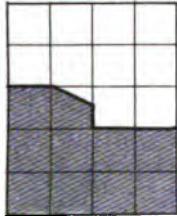
Spain



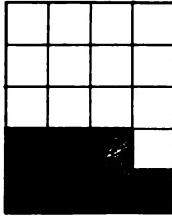
Holland



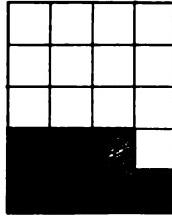
Belgium



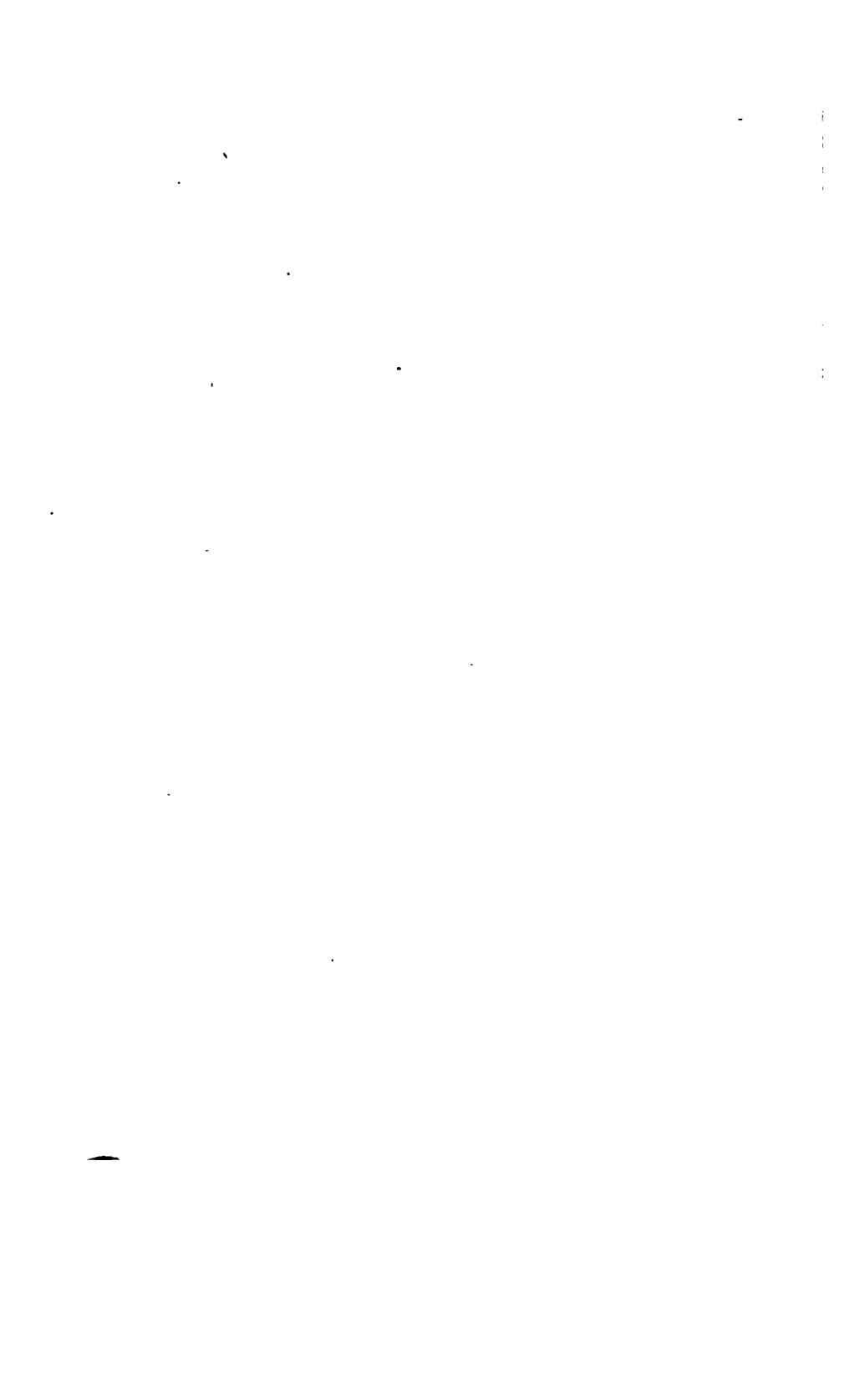
Australia

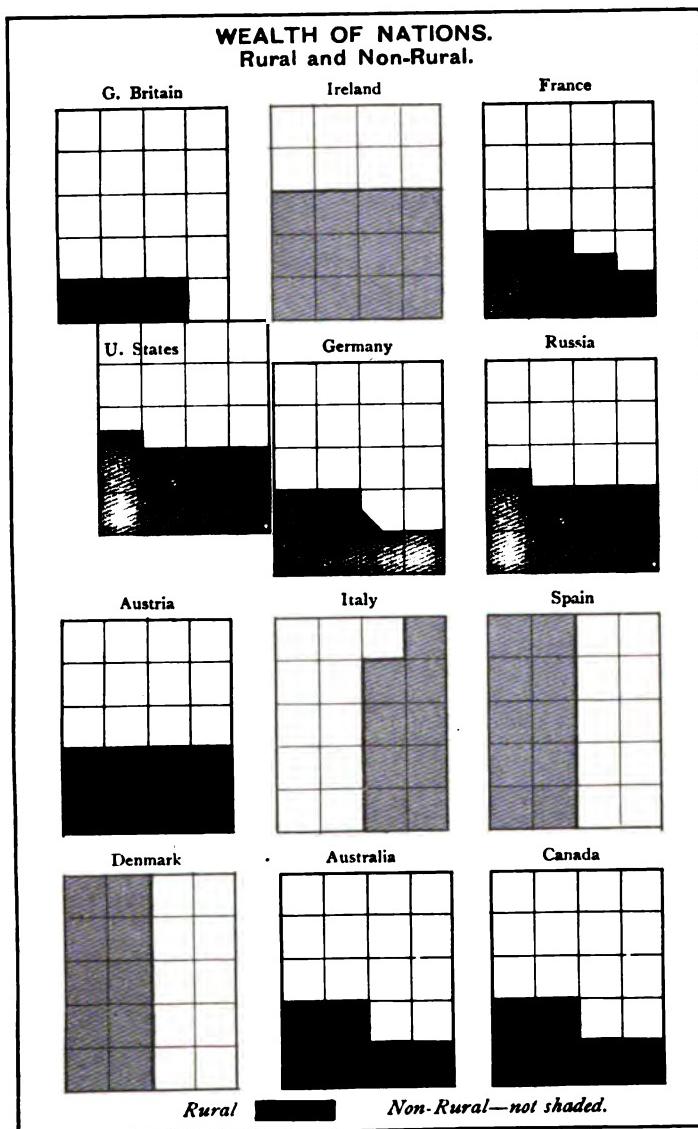


Canada

*Real**Personal—unshaded.*

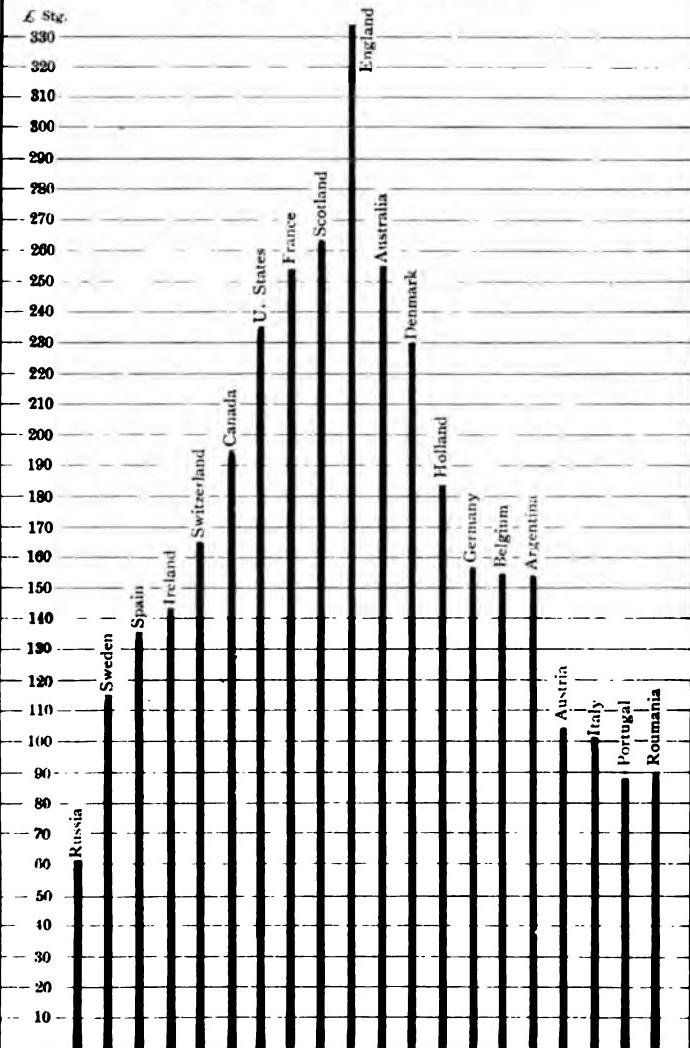
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OF
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WEALTH PER INHABITANT.





	Millions £.	£ per Inhab.		Millions £.	£ per Inhab.
United Kingdom	102	2·6	Austria	. .	82 1·9
France	126	3·3	Italy	. .	62 2·0
Germany	101	2·0	Spain	. .	30 1·8
Russia	105	1·0	United States	. .	81 1·2

If we were to judge by the ratio of revenue per inhabitant, it would appear that France and Great Britain were the heaviest taxed, Russia the lightest, which is by no means the fact. In order to arrive at the incidence of taxation we must take first the approximate earnings of the people in each country, then the total amount of national and local taxes, and ascertain the ratio of the latter to the former. Taxation, of course, excludes post-office and other public services, national as well as local, and such sources of revenue as Crown lands, forests, &c. The amounts are approximately as follow:—

	Earnings, Millions £.	Millions £ Sterling.			Ratio of Tax.
		Nat. Taxes.	Local.	Total.	
United Kingdom	1,423	79	43	122	8·6
France	1,199	102	42	144	12·0
Germany	1,284	85	45	130	10·1
Russia	1,004	84	11	95	9·5
Austria	707	69	15	84	11·9
Italy	436	56	27	83	19·0
Spain	273	29	7	36	13·3
Other States	816	52	28	80	9·8
Europe	7,142	556	218	774	10·8
United States	8,116	66	98	163	5·2
Total	10,258	621	816	937	9·1

It may be laid down as a rule that taxation is heavy when it exceeds 10 per cent. of national earnings, and light when under that ratio. Thus it appears that Italy, France, Spain, and Austria are overtaxed; while Germany and Russia have relatively light burthens, but Russia loses the benefit in this respect by the unscrupulous conduct of the government in issuing "dishonest" money, inconvertible notes, whose value is so variable as to prove a national curse. The incidence of taxation in the United States is one-third less than in the

United Kingdom, and although we are still under the dividing line between light and heavy taxation, the tendency is manifestly in an ascending, rather than a descending, direction.

Debt.—Taking the aggregate of national and local debt in the various countries, we find that the total has nearly quadrupled since 1848, rising from 1666 to 6200 millions, viz. :—

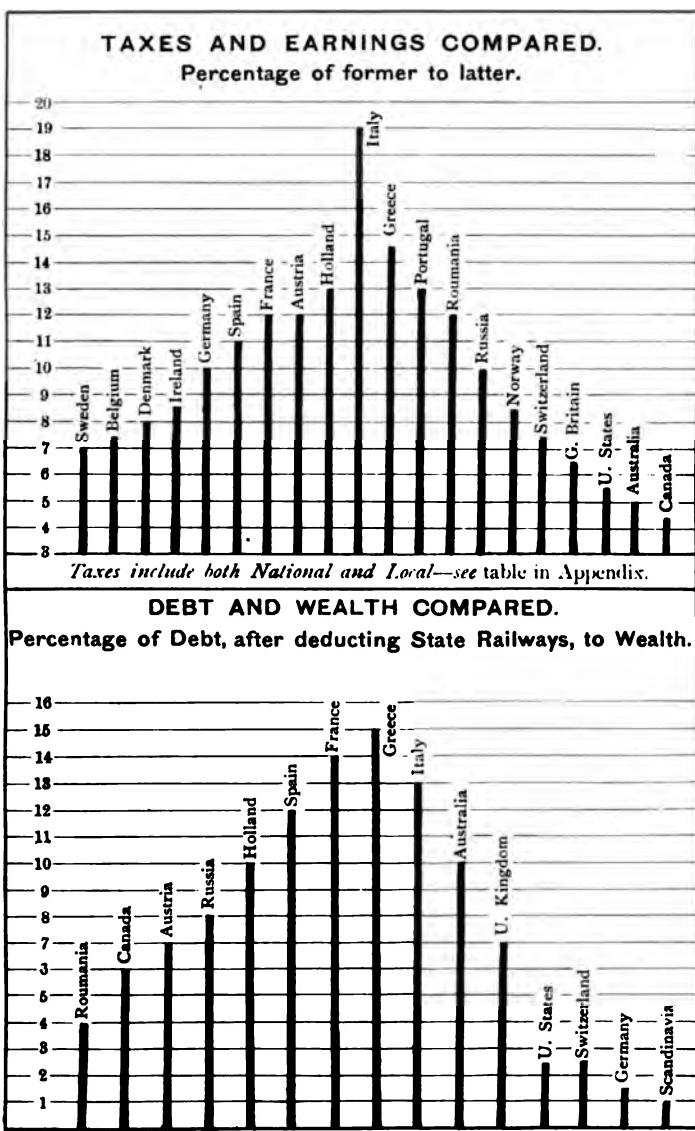
		1848.	1870.	1895.
United Kingdom	.	773	921	850
France	.	260	504	1,400
Germany	.	69	148	604
Russia	.	90	342	703
Austria	.	125	340	555
Italy	.	36	388	553
Other States	.	298	577	801
Europe	.	1,651	3,165	5,466
United States	.	10	485	425
British Colonies	.	5	54	809
Total	.	1,666	3,704	6,200

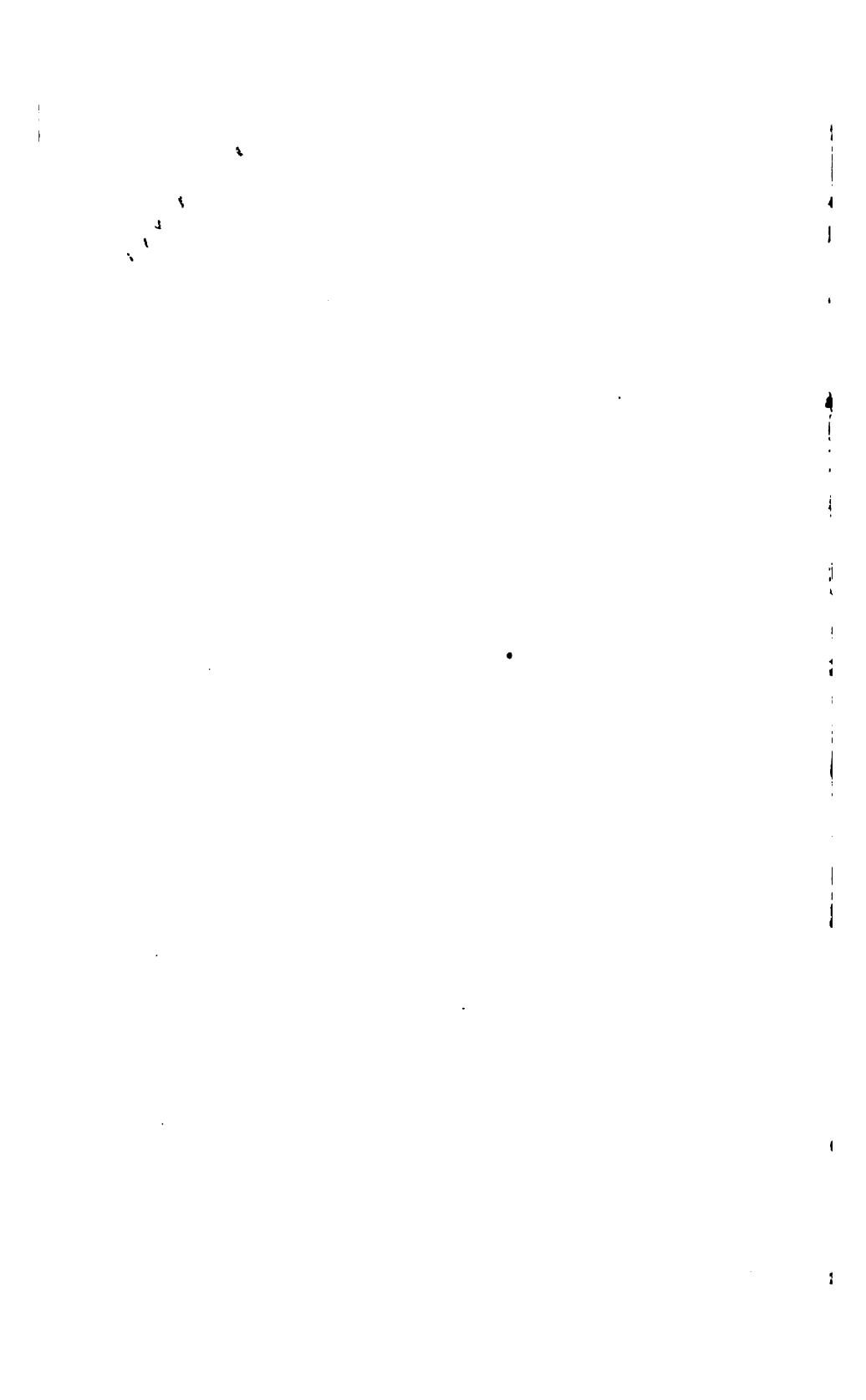
The above is exclusive of the debts of Turkey, Egypt, India, and South America. It is to be observed that in the foregoing table the debts of some countries in 1895 are largely made up of sums spent on State railways, the net proceeds of which considerably swell the public revenues. If we deduct the cost of such railways (which makes up an aggregate of 1418 millions) so as to arrive at the real debt in those countries, the account will stand in comparison with national wealth thus :—

	Millions £.				Millions £.		
	Wealth.	Debt.	Ratio of Debt.		Wealth.	Debt.	Ratio of Debt.
U. Kingdom	11,806	850	7·2	Austria	. 4,512	324	7·2
France	9,690	1,370	14·0	Italy	. 3,160	423	13·4
Germany	8,052	117	1·4	U. States	16,350	425	2·5
Russia	6,425	495	7·7	B. Colonies	2,079	164	8·0

In the above table British Colonies include only Australia and Canada.

Here again we may lay down the rule that when a nation's debt, including local, exceeds 10 per cent. of the people's





fortune, it is desirable in every way to avoid any further increase of indebtedness. France and Italy are supporting at present a heavy burthen in this respect, the incumbrance having been chiefly caused in both cases by military expenditure. The only nations of first-class importance that are practically unburthened with debt are Germany and the United States, the German debt being only as 1½ per cent., the American 2½ per cent. of wealth. The relative weight of debt in the British Colonies is not much greater than in the Mother Country, and is far from heavy.

FOOD SUPPLY

As might be expected, we find the richest nations are the best fed, that is to say, they consume less grain than poorer States, and more of everything else. Thus it comes to pass that while food is cheaper in Great Britain than in most countries, the expenditure is, nevertheless, higher per inhabitant than elsewhere. The following table shows the value of food consumed yearly in various countries :—

	Millions £ Sterling.				Millions £	
	Grain.	Meat.	Sundries.	Total.	Native.	Imported.
United Kingdom .	56	91	234	381	224	157
France .	95	62	183	340	292	48
Germany .	102	72	283	406	354	52
Russia .	151	86	157	394	387	7
Austria .	76	45	123	244	238	6
Italy .	45	18	94	157	150	7
Other States .	102	75	178	355	274	81
Europe .	627	449	1,201	2,277	1,919	358
United States .	90	129	306	525	477	48
Total .	717	578	1,507	2,802	2,396	406

Grain may be said to stand for one-fourth the expenditure, although in the United Kingdom it is only one-seventh. Meat, on the other hand, holds a higher ratio in the United Kingdom than in other countries. The average cost of food per inhabitant, at wholesale prices, shows thus :—

Shillings per Head.

	Grain.	Meat.	Dairy.	Liquor.	Sundries.	Total.
United Kingdom	28	46	28	47	45	194
France	. . . 49	32	23	34	37	175
Germany	. . . 89	28	24	28	38	157
Russia	. . . 28	16	8	4	17	73
Austria	. . . 35	21	17	13	27	113
Italy	. . . 30	12	18	24	25	104
Belgium	. . . 48	23	28	41	23	163
Scandinavia	. . . 44	31	20	15	20	130
Other States	. . . 30	25	25	14	18	112
Europe	. . . 34	24	17	21	27	123
United States	. . . 26	37	24	18	45	150

The foregoing tables apply to food only for human beings, excluding all grain that is used for feeding cattle. The quantities of grain of all kinds and of such food as is the immediate product of agriculture have been already set forth in the chapter on agriculture, and will be found fully detailed in the appendix. If we compare the amount spent on food with the earnings of each nation we find as follows, counting the year as 365 days:—

	Millions £ Sterling per Annum.		Ratio of Food.	Pence daily per Inhabitant.	
	Earnings.	Food.		Earnings.	Food.
Great Britain	. . . 1,381	357	26·8	25·3	6·8
Ireland	. . . 92	24	26·1	13·5	3·5
United Kingdom	. . . 1,423	381	26·8	23·9	6·4
France	. . . 1,199	340	28·3	20·5	5·8
Germany	. . . 1,284	406	31·6	16·2	5·1
Russia	. . . 1,004	394	39·2	8·2	2·4
Austria	. . . 707	244	34·5	11·0	3·8
Italy	. . . 436	157	36·0	9·2	3·3
Spain	. . . 273	108	37·7	10·2	3·8
Portugal	. . . 64	23	36·0	8·9	3·2
Scandinavia	. . . 202	59	29·0	14·7	4·3
Holland	. . . 124	38	29·7	17·0	5·2
Belgium	. . . 181	51	27·7	19·0	5·3
Switzerland	. . . 70	21	29·1	15·4	4·6
Roumania, &c.	. . . 175	60	34·3	8·5	2·9
Europe	. . . 7,142	2,277	31·9	12·7	4·0
United States	. . . 3,116	525	16·8	29·0	4·9

It appears that in Europe one-third of the earnings of peoples goes to pay for food, but in Great Britain the ratio is little over one-fourth, and in the United States it is only one-sixth. At the same time the average earnings per inhabitant are much higher in the United States and in Great Britain than in the other countries of the above list. This shows that the economic conditions of the British and American peoples is much better than on the European Continent. The retail cost of food would be 25 per cent. over the above figures; thus the actual cost daily per head in the United Kingdom is 8 pence, in Russia 3 pence, and so on.

While the economic condition of Great Britain, as regards national earnings and expenditure on food, is highly satisfactory, the case is far otherwise in Ireland, which country has been in a chronic state of misery since the close of the reign of George II. (excepting a brief interval from 1855 to 1875). The expenditure on food is only $3\frac{1}{2}$ pence daily, or half what it is in Great Britain. It seems strange that Ireland should, per inhabitant, spend less on food than either Spain or Austria, seeing that the average earnings of the Irish people are much higher than those of Austrians or Spaniards; but we must bear in mind the fact that Ireland has to pay a tribute of at least £2,000,000 a year to absentee landlords, and the recent report on Financial Relations shows that her share of taxation is £1,800,000 over what it ought to be. These are unquestionably the two great causes of suffering and discontent in the Sister-Kingdom.

III.

UNITED KINGDOM

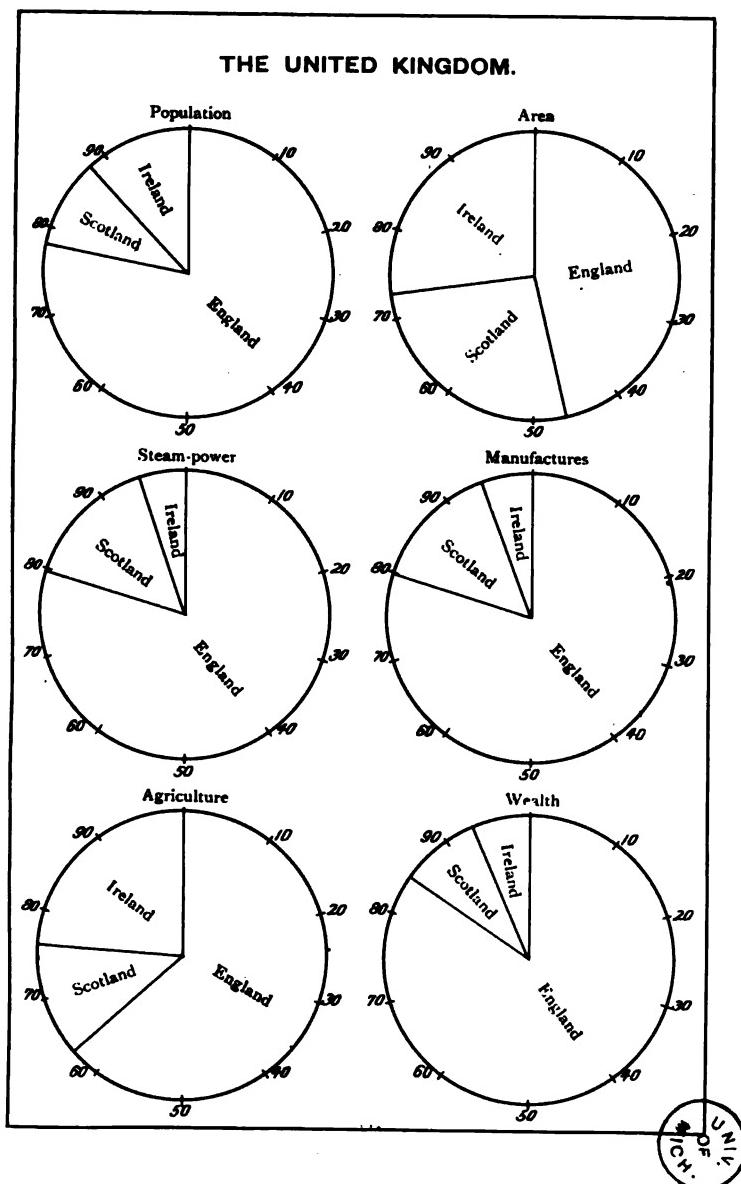
In little more than half-a-century the United Kingdom has risen 50 per cent. in population, besides sending out 10 millions of settlers to new countries. The number of inhabitants in 1896 compares with the figures for 1841 as follows:—

	Population.		Per Square Mile.	
	1841.	1896.	1841.	1896.
England	16,038,000	30,700,000	275	530
Scotland	2,620,000	4,200,000	86	140
Ireland	8,197,000	4,500,000	256	138
United Kingdom .	26,855,000	89,400,000	220	824

England and Scotland are over-populated, being unable to raise sufficient food for their people. Ireland, on the contrary, produces food for nearly 50 per cent. more than her population. England is now the densest peopled country in Europe, except Belgium. In a period of forty-four years, ending December 31, 1894, the number of emigrants nearly reached 9 millions, viz. :—

To	English.	Scotch.	Irish.	Total.
United States . .	2,360,000	478,000	2,935,000	5,773,000
Australia . . .	827,000	280,000	408,000	1,495,000
Canada	608,000	215,000	202,000	1,020,000
Other parts . . .	388,000	95,000	85,000	468,000
Total . .	4,128,000	1,048,000	8,580,000	8,756,000

The English and Scotch do not appear to have survived in the same ratio as the Irish. The latest census returns showed the numbers still resident in the above new countries as follows :—





In		British.	Irish.	Total.
United States . . .		1,251,000	1,872,000	3,123,000
Australia . . .		785,000	275,000	1,040,000
Canada . . .		827,000	149,000	476,000
Total . . .		2,848,000	2,296,000	4,639,000

In the period of forty-four years to end of 1894 the ratio of Irish emigration to the total from the United Kingdom was only 43 to 100, but according to the latest census returns the Irish settlers formed 49½ per cent of all British subjects resident in the above new countries. It may be, at the same time, that the numbers of English and Scotch returning to their native land has been relatively larger than of Irish. The number of persons returning to the United Kingdom has greatly increased in late years, averaging 106,000 per annum from 1890 to 1894 inclusive, against 64,000 in the years 1880 to 1884. There is a growing preponderance of females in the United Kingdom, which might be supposed to result from emigration; but this can hardly be the case, seeing that the ratio of males has risen very remarkably both in Scotland and Ireland, viz.:—

	Females to 1,000 Males.		
	1821.	1861.	1891.
England	1,050	1,052	1,064
Scotland	1,128	1,112	1,072
Ireland	1,033	1,045	1,028
United Kingdom	1,053	1,057	1,060

Vital statistics show that the span of life in Ireland is much longer than in Great Britain, which is perhaps partly due to the fact that the Irish marry at a more mature age than the English or Scotch.

In	Average Age when Marrying.		
	Husband.	Wife.	Both.
England	27·7	25·5	26·6
Scotland	28·6	25·7	27·2
Ireland	29·9	25·2	27·6

It is to be observed that the difference of age between husband and wife is greater in Ireland than in the sister kingdoms, which promotes a stronger race. The relative

occupations and the working-power of the three kingdoms in 1891 are shown in aliquot parts as follows:—

	England.	Scotland.	Ireland.	U. Kingdom
Agriculture . . .	80	15	56	151
Manufactures . . .	436	62	39	537
Trade . . .	83	10	6	99
Professions . . .	55	7	12	74
Domestics . . .	113	12	14	139
Total . . .	767	106	127	1,000

Agriculture occupies a much smaller ratio of people than in other countries; in fact it supports only 10 per cent. of the population of England, or 15 per cent. of that of the United Kingdom. Occupations have undergone a striking change in the last half-century, the returns for the whole United Kingdom in 1891 comparing with those in 1841 as follows:—

	Number.		Ratio.	
	1841.	1891.	1841.	1891.
Agriculture . . .	3,401,000	2,527,000	37·8	15·1
Manufactures . . .	3,137,000	9,026,000	34·8	53·7
Trade . . .	684,000	1,676,000	7·6	9·9
Professions . . .	223,000	1,245,000	2·5	7·4
Domestics . . .	1,556,000	2,342,000	17·3	13·9
Total . . .	9,001,000	16,816,000	100·0	100·0

Fifty years ago the number of agricultural hands was greater than that of persons employed in manufactures, whereas at present the latter are $3\frac{1}{2}$ times as numerous as the former. The decline of rural industry and rapid increase of manufactures have been attended with a great rise in urban population. If we take the aggregate population of the ten principal cities of the United Kingdom in 1821 and compare it with 1894, we shall see how much greater has been the increase than in the rest of the kingdom, viz.:—

	1821.	1894.	Increase. Per Cent.
Ten Cities . . .	2,310,000	8,502,000	270
Rest of U. Kingdom	18,674,000	30,284,000	62
Total pop. . .	20,984,000	38,786,000	85

It appears that in the last seventy-three years urban population has grown four times as fast as rural, and every succeeding census shows that cities engross more and more the pursuits and energies of our people. The working-power of the United Kingdom grows much faster than population : it has multiplied six-fold since 1840, viz. :—

	Millions of Foot-Tons Daily.			Foot-Tons Per In- habitant.
	Hand.	Horse.	Steam.	Total
1840 . . .	2,220	5,100	2,400	9,720
1860 . . .	2,430	5,500	8,600	16,530
1880 . . .	2,940	5,700	31,200	39,840
1895 . . .	3,200	6,330	51,880	61,410

The average power per inhabitant has quadrupled since 1840, which signifies that one man can now do as much as four could half-a-century ago. The energy of the three kingdoms in 1895 was distributed approximately thus :—

	Millions of Foot-Tons Daily.			
	England.	Scotland.	Ireland.	U. Kingdom.
Hand . . .	2,480	330	390	3,200
Horse . . .	4,020	630	1,680	6,330
Steam . . .	41,400	8,620	1,860	51,880
Total . . .	47,900	9,580	3,930	61,410

Steam works much cheaper than horse or hand, and hence the incalculable advantage that Great Britain possesses over Ireland. We find that 86 per cent. of all work done in England, 90 per cent. in Scotland, and only 47 per cent. in Ireland, is done by steam. The total energy compared with population shows 2300 foot-tons daily per inhabitant in Scotland, 1570 in England, and 860 in Ireland, from which it follows that 10 Scotchmen can do as much as 14 Englishmen or 27 Irishmen. The steam-power of the three kingdoms is approximately as follows :—

	Horse-Power.			
	Fixed.	Railway.	Steamboats.	Total
England . . .	1,740,000	4,100,000	4,510,000	10,350,000
Scotland . . .	315,000	510,000	1,330,000	2,155,000
Ireland . . .	145,000	190,000	130,000	465,000
U. Kingdom . . .	2,200,000	4,800,000	5,970,000	12,970,000

The steam-power of the United Kingdom is a little more than that of France and Germany combined, and is only surpassed by that of the United States : it is one-fifth of that of the world.

AGRICULTURE

It was observed by Lord Liverpool that the most prosperous periods of British agriculture were sometimes those in which the general condition of the British people was unsatisfactory, from which it may be inferred that agricultural depression may exist while the general progress of the country is uninterrupted. Thus the last half-century has witnessed an unprecedented increase of commerce, manufactures, and wealth, and at the same time agriculture has been either stationary, or in some respects retrograde. If we compare Porter's and M'Culloch's estimates of the area under crops in their times with the official returns for 1895 we find as follows :—

	Acres under Crops.		
	1827.	1846.	1895.
England . . .	11,140,000	13,300,000	12,550,000
Scotland . . .	2,550,000	3,390,000	3,510,000
Ireland . . .	5,450,000	5,240,000	3,990,000
United Kingdom	19,140,000	21,930,000	20,050,000

The area under crops has declined by 2 million acres since 1846, but this has been in a manner compensated by the increase of pastoral industry, the whole productive area of the United Kingdom showing a rise of 3 million acres, viz. :—

Year.	Grain.	Green Crops.	Pasture.	Total.
1846 .	11,600,000	10,330,000	22,940,000	44,870,000
1895 .	8,870,000	11,180,000	27,830,000	47,880,000

The average of crops and meat production in the last three years was as follows :—

	Tons.			
	England.	Scotland.	Ireland.	U. Kingdom.
Wheat .	1,170,000	35,000	35,000	1,240,000
Barley .	1,470,000	190,000	160,000	1,820,000
Oats, &c. .	2,840,000	955,000	1,165,000	4,460,000
Grain .	4,980,000	1,180,000	1,360,000	7,520,000
Potatoes .	2,500,000	800,000	2,800,000	6,100,000
Turnips .	20,600,000	6,200,000	4,500,000	30,300,000
Hay .	6,750,000	850,000	4,700,000	12,300,000
Meat .	610,000	150,000	340,000	1,100,000

Notwithstanding that the price of grain has fallen 40 per cent. since 1846, the gross value of farm products is greater now than it was fifty years ago. The value during the last three years averaged 230 millions sterling, against M'Culloch's estimate of 218 millions in 1846, viz. :—

	Value, £ Sterling.	
	1846.	1893-95.
Grain	77,000,000	88,200,000
Green crops	41,600,000	48,800,000
Hay and straw	19,000,000	44,000,000
Meat	46,500,000	55,200,000
Dairy	19,400,000	38,000,000
Sundries	14,500,000	15,800,000
Total	218,000,000	230,000,000

While the value of products shows an increase of $5\frac{1}{2}$ per cent. as compared with 1846, the number of hands has been reduced by one-third, this being mainly due to the introduction of machinery. The figures stand thus :—

Year.	Hands.	Product, £.	£ per Hand.
1846	3,519,000	218,000,000	62
1895	2,527,000	230,000,000	91

It appears that two hands now produce as much in value as three did fifty years ago, and seeing that prices have fallen no less than 40 per cent. it may be said that two men now produce in quantity as much as five did then. The value of farm products in the years 1893-94-95 averaged as follows :—

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	England, £.	Scotland, £.	Ireland, £.	U. Kingdom, £.
Grain . .	26,600,000	5,200,000	6,400,000	38,200,000
Straw . .	9,100,000	1,500,000	1,600,000	12,200,000
Potatoes . .	8,800,000	2,400,000	7,000,000	18,200,000
Hay . .	20,300,000	2,100,000	9,400,000	31,800,000
Sundries . .	18,200,000	3,800,000	8,600,000	25,600,000
Tillage . .	83,000,000	15,000,000	28,000,000	126,000,000
Meat . .	33,200,000	7,400,000	14,600,000	55,200,000
Dairy . .	21,000,000	3,600,000	8,400,000	33,000,000
Sundries . .	9,800,000	2,000,000	4,000,000	15,800,000
Total . .	147,000,000	28,000,000	55,000,000	230,000,000

The concentration of landed property in the hands of a few is a special characteristic of the United Kingdom, and may constitute an obstacle to agricultural progress. Two-thirds of England, nine-tenths of Ireland, and nineteen-twentieths of Scotland, are held in ownership by a small group of persons. This system of land-tenure is quite at variance with what prevails in other countries (except Portugal). At present the United Kingdom, excluding estates of less than 10 acres, is held as follows :—

Estates.	Number.	Acres.	Average.
Large . .	19,275	57,890,000	3,003
Small . .	157,640	13,600,000	86
Total . .	176,915	71,490,000	...

Agricultural capital rose steadily from 1780 until 1880, but since the latter year it has fallen so rapidly that it is now little more than it was fifty years ago :—

	Value, Millions £ Sterling.				
	1780.	1812.	1846.	1880.	1895.
Land . .	702	1,101	1,705	2,086	1,686
Cattle . .	86	146	150	209	202
Sundries . .	79	125	185	230	189
Total . .	867	1,372	2,040	2,525	2,077

Landowners and farmers have lost 450 millions of capital since 1880—that is, an average of 30 millions yearly. The distribution of capital in 1894 was approximately thus :—

	Millions £ Sterling.			
	England.	Scotland.	Ireland.	U. Kingdom.
Land . .	1,202	188	296	1,686
Cattle . .	118	25	59	202
Sundries . .	132	21	36	189
Total . .	1,452	234	391	2,077

If we compare the agricultural capital in each of the three kingdoms in 1894 with what it was in 1846, we find a diminution in England, and an increase both in Scotland and Ireland. The following table shows the capital and product at the above dates in each of the kingdoms, and the ratio of product to capital :—

	Millions £ Sterling.		Product.		Product Ratio.	
	Capital.		1846.	1894.	1846.	1894.
	1846.	1894.	1846.	1894.	1846.	1894.
England . .	1,486	1,452	142	147	9·5	10·1
Scotland . .	213	234	28	28	13·1	12·0
Ireland . .	341	391	48	55	14·1	14·1
U. Kingdom	2,040	2,077	218	230	10·7	11·1

Here we find that the gross product in the United Kingdom represents a higher percentage on capital than it did in 1846, but this would not warrant us to infer that the farmers' profits are larger; we have no means for ascertaining what the net profits were then, or are at present. At various periods estimates have been made in England as to the cost of working a farm of 100 acres, 40 arable, 60 pasture, viz. :—

	£ Sterling.					
	Rent.	Taxes.	Team.	Labour.	Sundries.	Total.
1790 . .	88	39	67	85	110	389
1813 . .	118	70	99	118	121	526
1888 . .	120	42	100	125	63	450

The gross product of the above farm in 1895 would have been as follows :—

	Acres.	Shillings per Acre.	£
Tillage	40	132	264
Pasture	60	84	252
Total	100	103	516

This would leave a balance of £66, or 13 shillings an acre, that is 25 shillings a week for support of the farmer and his family. Rent and taxes absorb a larger proportion of the gross product in England than in the sister kingdoms, viz. :—

	Product.	Millions £ & Sterling.			Ratio of Rent and Taxes. Per Cent.	
		Rent.	Taxes.	Balance.		
England . . .	147·0	40·1	16·2	90·7	38	
Scotland . . .	28·0	6·3	1·9	19·8	29	
Ireland . . .	55·0	10·8	2·7	41·5	25	
U. Kingdom . .	230·0	57·2	20·8	152·0	34	

The advantage of farming in Ireland is, meantime, unreal ; the tenant in that country has to build offices and make improvements, which are done in England by the landlord. Moreover, the money-product per acre is much less in Ireland than in Great Britain, viz. :—

	Acres, Productive.	Product, Millions £.		Shillings per Acre.	
		Gross.	Net.	Gross.	Net.
England . . .	27,800,000	147	91	106	65
Scotland . . .	4,900,000	28	20	114	82
Ireland . . .	15,200,000	55	41	72	54
U. Kingdom . .	47,900,000	230	152	96	63

In the eighteenth century the British Islands had usually a surplus of grain, beef, butter, and cheese, and these articles formed considerable items in the yearly exports, but in the last half-century so rapid has been the increase of population that the agricultural products have been insufficient to feed the inhabitants of the United Kingdom. The annual consumption of wheat since 1831 has been as follows :—

Period.	Millions of Bushels.		
	Native.	Imported.	Total.
1831-50 . . .	113	14	127
1851-70 . . .	101	55	156
1871-90 . . .	85	135	220
1891-95 . . .	51	192	243

The quantity of home-grown wheat is now less than the requirement for three months' consumption. The decline of tillage is, of course, one of the results of the enormous importation of grain, but a result of far greater magnitude has been the cheapening of food for the people. During a period of five years, ending December 1895, the average price of wheat in England was less than £7 per ton, and the annual consumption reached 360 lbs. per inhabitant, whereas in the decade ending 1860 the average price was nearly £14, and the consumption did not exceed 311 lbs. If we reduce all food to a common denominator, we find that the actual production in the United Kingdom is equivalent to 18½ million tons of grain, the averages for the years 1893-94-95 having been as follows:—

	Tons Yearly.			Equivalent in Tons Grain,	Bushels per In- habitant.
	Grain.	Potatoes.	Meat.		
England . . .	5,000,000	2,500,000	610,000	10,710,000	14
Scotland . . .	1,200,000	800,000	150,000	2,670,000	25
Ireland . . .	1,360,000	2,800,000	340,000	5,020,000	44
U. Kingdom . . .	7,560,000	6,100,000	1,100,000	18,400,000	20

England raises food sufficient to support her people only 5½ months, Scotland 10 months, but Ireland produces enough to feed 7,000,000 persons all the year, or 50 per cent. over her actual population. More than half the grain consumed in the United Kingdom is imported; the average consumption, after deducting from native crops what is required for seed, shows as follows in 1891-95:—

	Tons.		
	Native.	Imported.	Total.
Wheat	1,230,000	4,800,000	6,030,000
Barley	1,750,000	1,100,000	2,850,000
Oats, &c. . . .	4,400,000	2,800,000	7,200,000
Total	7,380,000	8,700,000	16,080,000

In order that the United Kingdom should produce sufficient grain for consumption, so as not to import any, it would be necessary to put under cereals 19,100,000 acres, that is

10,200,000 more than at present. While the production of grain has declined 25 per cent. since 1846, that of meat has increased 20 per cent.; the quantities were as follows:—

Year.	Product, Tons.			Total.
	Beef.	Mutton.	Pork.	
1846 . . .	440,000	310,000	170,000	920,000
1895 . . .	590,000	320,000	190,000	1,100,000

This increase has, however, fallen short of requirements. Not only has our population increased by 12 million souls in the above interval, but the average consumption of meat per inhabitant has risen 40 per cent. Thus it comes to pass that the quantity of meat consumed yearly has doubled, showing as follows:—

Year.	Consumption, Tons.			Lbs. per Head.
	Native.	Imported.	Total.	
1846 . . .	920,000	...	920,000	75
1895 . . .	1,100,000	780,000	1,880,000	108

Ireland exports live cattle to Great Britain equivalent to 280,000 tons of dead meat yearly, leaving for home use only 60,000 tons, say 30 lbs. per inhabitant, but this is probably so far supplemented by foreign meat as to raise the consumption in that country to 40 lbs. per inhabitant. The production and consumption of meat in the three kingdoms are shown approximately as follows:—

	Production, Tons.			Consumption, Tons.	
	Beef.	Mutton.	Pork.	Total.	Tons.
England . . .	285,000	200,000	125,000	610,000	1,620,000
Scotland . . .	65,000	80,000	5,000	150,000	180,000
Ireland . . .	240,000	40,000	60,000	340,000	80,000
U. Kingdom	590,000	320,000	190,000	1,100,000	1,880,000

The home production is sufficient to give to each inhabitant of the United Kingdom 63 lbs. yearly, and this ought to be enough, for it is observed that the span of life is much longer in Ireland, where the consumption of meat per inhabitant is less than half what it is in England. There are not wanting medical authorities to affirm that the consumption of meat in England is excessive.

FORESTS AND FISHERIES

The forest area of the United Kingdom and the approximate value of product are shown as follows :—

		Acres.	Product, £.
England	1,800,000	1,200,000	
Scotland	900,000	600,000	
Ireland	300,000	200,000	
United Kingdom	<u>3,000,000</u>	<u>2,000,000</u>	

The area under timber has increased by 200,000 acres since 1887, but is still insufficient. The annual consumption of timber exceeds 550 million cubic feet, of which only one-fourth is of native growth.

The fisheries of the United Kingdom are shown thus :—

	Fishermen.	Tons Fish.	Value, £.
England	43,000	380,000	5,430,000
Scotland	50,000	310,000	1,830,000
Ireland	27,000	30,000	270,000
United Kingdom	<u>120,000</u>	<u>700,000</u>	<u>7,530,000</u>

The net imports of fish average £600,000 per annum, which brings up consumption to £8,100,000, equal to 4 shillings per inhabitant. The weight consumed gives an average of 40 lbs. per inhabitant, as compared with 108 lbs. meat. Comparing the value of fish taken with the number of fishermen, it shows £10 per man in Irish waters, £78 in British, the average all round being £63 per man, which is a poor return for so dangerous a calling.

MANUFACTURES

The total output of British manufactures at the beginning of the present century was valued by Eden and Stevenson at not more than 105 millions sterling; those writers appear,

however, to have taken account only of factories, and to have left out what the French call "small industries." The real value of our manufactures in 1810 was double the above estimate.

Textiles.—The advance of this branch of industry is best measured by the consumption of fibre, the weight being shown as follows:—

Year.	Tons of Fibre.			
	Cotton.	Wool.	Flax, &c.	Total.
1810 . . .	51,000	55,000	74,000	180,000
1850 . . .	252,000	83,000	184,000	519,000
1895 . . .	696,000	246,000	460,000	1,402,000

The value of manufactured goods has by no means kept pace with the consumption of fibre; improvements connected with machinery have caused a great fall in prices, besides the fact that all descriptions of raw material are cheaper now than in years gone by. The output of textiles has been approximately as follows:—

Year.	Value, Millions £ Sterling.				
	Cottons.	Woollens.	Linens, &c.	Silks.	Total.
1810 . . .	20	18	13	5	56
1850 . . .	49	28	18	12	107
1895 . . .	92	62	31	6	191

For many centuries woollen manufactures held the foremost rank in England, but about the beginning of the nineteenth cotton rushed to the front, and it has ever since maintained undisputed pre-eminence.

Cotton Goods.—Although Manchester merchants, as Roberts shows, made stuffs out of Smyrna and Cyprus cotton in the days of Charles I, this industry may be said to date from 1790. In that year Arkwright's spinning-jenny was invented, and in 1791 the first invoice of American cotton arrived, consisting of 91 tons. The chief impetus, however, was given in 1801, when Cartwright's power-loom was first brought into use at Monteith's mill, in Pollokshaws, near Glasgow. Cotton mills multiplied in Great Britain, and in the course of years such improvements of machinery have been introduced

that, as Yeats says, a mule-frame that used to work 20 spindles now works 3000, and each spindle produces fifty times as much as in 1820. So great has been the effect of machinery in cheapening goods that a pound of yarn which cost 38 shillings in 1786 may now be bought for a shilling. Coming down to our own time, we find that although the price of raw cotton in the last five years was the same ($5\frac{1}{4}$ d. per lb.) as in the decade ending 1850, the price of cotton cloth has fallen 36 per cent., namely, from £25 to £16 per statute mile. The following table shows approximately the consumption of cotton cloth at various dates:—

	English Statute Miles.		
	1820.	1840.	1895.
United Kingdom . .	101,000	790,000	1,320,000
India and China . .	9,000	656,000	1,410,000
South America . .	82,000	301,000	440,000
Various . . .	80,000	623,000	1,030,000
Total . . .	222,000	2,370,000	4,200,000

Estimates have been made at various times as to the amount of capital and wages, and the value of output. Ellison's table for 1887 compares with Baines's for 1833 as follows:—

Year.	Cotton, £.	Wages, £.	Output, £.	Capital, £.
1833 . .	7,000,000	10,400,000	31,300,000	34,000,000
1887 . .	84,500,000	29,400,000	101,400,000	105,000,000

The value of exported goods and of home consumption in 1895 was as follows:—

Exports	£54,500,000
Home use	37,600,000
Total output	£92,100,000

We consumed also £2,500,000 of imported cotton goods, bringing up the total consumption to £40,100,000, equal to 20 shillings per inhabitant.

The value of goods produced annually averages £175 per hand. If we suppose that for efficiency a child counts as one-third, and a woman two-thirds, of a man, the result will be:—

	No.	Product, £.	£ per Hand.
Men . . .	186,000	43,100,000	231
Women . . .	295,000	45,300,000	154
Children . . .	48,000	3,700,000	77
Total . . .	529,000	92,100,000	175

The mills at present turn out daily 14,000 miles of cotton cloth, and the daily wages of the operatives are about £100,000 sterling.

Hosiery.—Stockings are a modern invention, for we read that in the reign of George II. they were worn in England by not more than 13,000 persons. In the early years of George III. there were only two factories, one at Nottingham, the other at Balbriggan, but the use of stockings became so general in the beginning of the present century, that when Felkin made his report in 1833 there were 33,000 stocking frames at work, and the output reached 42 million pairs yearly. The factories now produce about 150 million pairs yearly, of which 12 millions are exported.

Woollen Goods.—The manufacture of woollens was considered for centuries the sheet-anchor of British industry. Kings and parliaments surpassed one another in arbitrary edicts for its encouragement: it was forbidden to wear clothes made abroad, or to export wool, or to shear a sheep within three miles of the sea. It was commanded to bury corpses in woollen shrouds. All the woollen factories in Ireland were closed by the English Parliament in 1690, in order to compel Irishmen to use English woollen goods. Some of these tyrannical edicts were repealed in 1810, the latest in 1825, and since the latter year this branch of industry, far from declining, has grown apace. Stevenson's and M'Culloch's estimates compare with the present output thus:—

Year.	Home Use, &c.	Export.	Total Output.
1816 . . .	10,200,000	7,800,000	18,000,000
1834 . . .	16,800,000	5,700,000	22,500,000
1895 . . .	34,800,000	26,900,000	61,700,000

The number of operatives in woollen, worsted, and shoddy

factories is 302,000, and the output averages £208 per hand, as compared with £175 in the cotton industry. Owing to improved methods and machinery the consumption of wool per hand rose from 1360 lbs. in 1870 to 1702 lbs. in 1893, which means that three operatives now do as much work as four could do in 1870. This economy of labour, as well as the fall in price of wool, has tended to cheapen woollen goods, extend the markets of such commodities, and give increased activity to our mills, which now consume twice as much wool as in 1870. Down to the year 1850 the greater portion of the wool used in our factories was home-grown, but at present three-fourths are imported. The home-clip averages 5 lbs. per sheep, say 66,000 tons, of which one-fifth is exported. The consumption of wool in our mills is shown thus:—

	Tons of Wool Consumed.			
	1840.	1860.	1880.	1895.
British . . .	37,000	45,000	50,000	53,000
Imported . . .	21,000	46,000	101,000	193,000
Total . . .	58,000	91,000	151,000	246,000

Besides home-made woollens we consume foreign fabrics, mostly French, to the value of £9,800,000, which brings up the total consumption in the United Kingdom to £44,600,000, equal to 23 shillings per inhabitant, as compared with 14 shillings in the time of M'Culloch.

Linen.—This branch of manufacture flourished in Ireland and Scotland before it was known in England. Irish linen was famous in the reign of Queen Anne. The first cargo of Russian flax in Scotland was imported for the Dundee mills in 1745. The production of linen has been approximately as follows:—

Period.	Millions of Yards, Yearly.			
	England.	Scotland.	Ireland.	Total.
1791-1800	. . .	13	22	42
1821-1830	. . .	24	60	90
1861-1870	. . .	54	140	204
1891-1893	. . .	42	130	172
				344

The system of bounties which had existed for 140 years was abolished in 1830, whereupon the mill-owners introduced improved machinery, the result of which was greater efficiency, economy, and production.

The consumption of flax is no more than it was forty years ago, the weight being shown as follows :—

Year.	Tons of Flax Consumed.		
	Native.	Imported.	Total.
1850 . . .	21,000	89,000	110,000
1895 . . .	12,000	100,000	112,000

The output in 1895 was not quite 400 million yards, of which 205 millions were exported ; the value of output was about £13,000,000. Of late years the linen trade has been declining, especially as regards home consumption, which averaged 8 yards per inhabitant in 1840, and is now less than 5 yards ; this decline is doubtless due to the increasing use of Crimean or woollen shirts. There is one serious drawback connected with linen manufacture, that it is most hurtful to operatives, of whom, as Dr. Purdon shows in his Factory Report, not less than 60 per cent. die of lung diseases ; he adds that their span of life after entering the factory is only seventeen years.

Hemp.—This is a manufacture of minor importance ; there is no mention of it in Porter's "Progress of the Nation," but McCulloch says that in 1835 the Dundee mills consumed 6500 tons of Russian hemp. The following table shows the quantities imported and retained for consumption, as well as the approximate value of articles manufactured :—

Year.	Tons.	Manufacture, £.
1830	26,000	2,100,000
1850	54,000	4,900,000
1895	70,000	5,200,000

An attempt was made to grow hemp in Ireland, in 1810, when 320 acres were put under it, but without success.

Jute.—This fibre is first mentioned in the trade reports of India in 1835, in which year 600 tons were exported from

that country. Soon afterwards it was largely consumed in the flax mills of Dundee, which city is the principal seat of this manufacture. The growth of this industry has been very rapid, viz. :—

Year.	Jute, Tons.	Output, £.
1850	19,000	900,000
1870	98,000	5,800,000
1895	272,000	12,300,000

About one-sixth of jute manufactures is exported.

Silks.—This industry rose steadily during the first half of the century, and reached its highest point in 1857, since which date it has declined.

Year.	Silk Consumed, Lbs.	Output, £.
1823	2,470,000	6,200,000
1857	10,750,000	21,500,000
1895	3,900,000	6,000,000

The annual consumption of silk manufactures reaches a value of £19,000,000, the net import of silk fabrics reaching £13,000,000 per annum. The consumption averages 10 shillings per inhabitant, the same as in France.

Hardware.—The consumption of metals gives us the measure of the growth of this industry, which falls little short of that of textile manufactures in importance :—

Year.	Tons of Metal Utilised.				
	Iron.	Copper.	Lead.	Zinc, &c.	Total.
1806 .	243,000	10,000	24,000	4,000	281,000
1850 .	1,970,000	42,000	70,000	24,000	2,106,000
1870 .	5,210,000	54,000	132,000	36,000	5,432,000
1894 .	6,600,000	80,000	178,000	79,000	6,937,000

The above table represents not the production, but the weight of metals converted in the United Kingdom into manufactured goods in the years expressed. This weight in 1894 was equal to 390 lbs. per inhabitant, a ratio not equalled in any other country.

Iron.—The rise of this industry may be said to date from 1740, when the Dudley process for smelting iron with coal was introduced, but it was just 100 years later that the

commencement of the construction of railways raised British iron to unprecedented importance in the economy of the world. The following table shows the production, the quantities exported, &c. :—

Year.	Make.	Tons of Iron.		
		Export Pig.	Do. Manufactures.	Home Use.
1835 .	700,000	20,000	160,000	520,000
1850 .	2,250,000	280,000	930,000	1,040,000
1870 .	5,960,000	750,000	2,080,000	3,130,000
1880 .	7,750,000	1,630,000	2,160,000	3,960,000
1894 .	7,430,000	830,000	1,880,000	4,720,000

The consumption of iron at the above dates was the "make," less the quantity of pig-iron exported. Thus it appears that although the "make" of iron was greater in 1880 than at present, the quantity used for manufactures was less; the consumption in 1894 was 6,600,000 tons, against 6,120,000 in 1880. The greatest production of iron on record was in the year 1882, namely 8,590,000, but of this amount no less than 1,760,000 tons were exported as pig-iron, leaving to be converted into British manufactures 6,830,000 tons, or about 3 per cent. more than we consume at present. The decline, therefore, of this branch of manufacture is more apparent than real. One-half of the iron made is converted into steel, and the quantities exported and retained in 1894 are shown thus:—

	Tons.		
	Iron.	Steel.	Total.
Exported . .	1,490,000	1,220,000	2,710,000
Retained . .	2,260,000	2,460,000	4,720,000
Total . .	3,750,000	3,680,000	7,430,000

It has been frequently asserted that the magnitude and variety of the iron and steel industries defy any attempt to ascertain their annual value even approximately; this is, however, not the case. We know the quantity and value of iron and steel goods exported, also the weight of metal retained for home manufacture. The official value of steel manufactures

in Great Britain in 1894 was £26·7 per ton, and we may be permitted to put down manufactures of iron at half that figure. The total output of iron and steel industries in 1894 was, therefore, approximately as follows :—

	Tons.	£. Value.
Steel manufactures . . .	2,460,000	65,700,000
Iron manufactures . . .	2,260,000	30,100,000
Exports, steel and iron . . .	2,710,000	20,200,000
Total output . . .	7,430,000	116,000,000

The above, of course, includes machinery, implements, arms, cutlery, shipbuilding and all manufactures in which steel or iron is the principal raw material. The production of steel has increased prodigiously of late years, viz. :—

Period.	Tons Made.	Per Annum.
1851-60 . . .	900,000	90,000
1861-80 . . .	10,200,000	510,000
1881-93 . . .	36,000,000	2,770,000

The first use of steel for railway bars was in 1862, at Chalk Farm station, near London, and proved so successful that iron bars are no longer used in constructing railways, and when worn out are replaced by steel ones. Ships were built of steel at Glasgow in 1879, when it was found that they could carry 20 per cent. more cargo than iron vessels of equal size; this led to a revolution in shipbuilding, steel wholly taking the place of iron. In some of the smaller industries, likewise, steel plays a chief part; thus 10 tons weekly are converted into steel pens at Birmingham, each ton producing 1,500,000 pens. The following is a summary of the iron and steel trade for forty-four years :—

Period.	Millions £ Sterling.			Millions £ Sterling.		
	Iron.	Steel	Total	Home Use.	Exports	Total
1851-60 . . .	883	56	439	261	178	439
1861-70 . . .	540	97	637	377	260	637
1871-80 . . .	729	341	1,070	656	414	1,070
1881-90 . . .	518	504	1,022	561	461	1,022
1891-94 . . .	170	270	440	264	176	440
44 years . . .	2,340	1,268	3,608	2,119	1,489	3,608

Copper.—The production of copper from British ores rose from 6000 tons in 1810 to 13,000 in 1840, but began to decline in the ensuing decade, and has now fallen so low that the average for the years 1892–94 did not exceed 450 tons. British ore gives only 7 per cent. of metallic copper, whereas Australian gives 12, and American still more. At present we import about 250,000 tons of regulus or half-smelted ore from Chili and other countries, which yielded last year about 135,000 tons of pure copper. The production has more than doubled since 1850, showing thus:—

Year.	Tons.		
	British.	Imported.	Total
1850 . . .	12,000	51,000	63,000
1894 . . .	600	135,000	135,500

Copper ingots were exported last year to the amount of 55,000 tons, leaving 80,000 tons for home manufactures, the total representing a value of £14,000,000. Stevenson estimated the copper manufactures in 1814 at £3,000,000.

Lead.—This industry, like that of copper, depends almost wholly on imported metal. The product of British mines rose steadily during the present century until 1870, when it reached its maximum, but since then the Austrian and Spanish mines have yielded so abundantly, and at less cost, that our production has fallen by more than one-half. The consumption has been as follows:—

Year.	Tons of Lead.		
	British.	Imported.	Total
1830 . . .	48,000	5,000	53,000
1894 . . .	30,000	148,000	178,000

The value of goods manufactured is only £5,000,000, almost entirely for home consumption.

Tin.—Great Britain passes through her factories two-thirds of the tin produced in the world. Our mines in Cornwall have been declining since 1871, and our manufacture is mostly dependent on metal imported from Java and Australia. The output has been as follows:—

Year.	Tons of Tin.		
	British.	Imported.	Total.
1850 . . .	6,000	500	6,500
1894 . . .	8,000	16,000	24,000

One-fourth of the tin produced in 1894 was exported unwrought, leaving 18,000 tons for home manufactures. The value of goods manufactured last year was £4,000,000.

Zinc.—The consumption of this metal has increased fourteen-fold in little more than half a century. The product of the mines in Wales and Isle of Man has increased prodigiously, but we still derive seven-eighths of our supply from abroad, as shown thus :—

Year.	Tons of Zinc.		
	British.	Imported.	Total.
1831 . . .	700	4,000	4,700
1894 . . .	8,000	53,000	61,000

The value of zinc manufacture last year was nearly £3,000,000.

Hardware Summary.—The growth in money value of our metallic manufactures has been more than ten-fold in a century, as will be seen on comparing the output of 1894 with M'Pherson's and Stevenson's estimates, showing as follows :—

Year.	Millions £ Sterling.		
	Iron and Steel.	Copper, &c.	Total.
1783 . . .	9	2	11
1814 . . .	14	3	17
1835 . . .	20	8	28
1894 . . .	116	28	142

According to the census of 1891 there were 1,240,000 operatives employed in metallic industries, exclusive of those engaged in mining. It appears, therefore, that the average output per hand in hardware is only £114, or two-thirds of the average for textile operatives. Professor Levi ascertained in 1881 that 943,000 hands engaged in foundries and similar establishments received for wages yearly a sum of £56,500,000, or almost £60 each. At the same rate the hardware opera-

tives would now be in receipt of £74,400,000, or 52 per cent. of the above estimated output of hardware manufactures.

The total value of the output of hardware since 1850 was approximately as follows :—

Period.	Millions £ Sterling.					
	Iron.	Copper.	Lead.	Tin.	Zinc.	Total.
1851-60 .	439	111	37	19	12	618
1861-70 .	637	131	45	21	9	843
1871-80 .	1,070	104	60	31	14	1,279
1881-94 .	1,462	189	65	50	30	1,796
44 years .	3,608	535	207	121	65	4,536

The value of hardware product is much less than that of textile manufactures, the aggregate for the last forty-three years summing up approximately as follows :—

Period.	Hardware, Millions £.			Textiles, ¹ Millions £.		
	Home.	Export.	Total.	Home.	Export.	Total.
1851-60 .	419	199	618	715	584	1,299
1861-70 .	545	298	843	795	954	1,749
1871-80 .	821	458	1,279	902	1,107	2,009
1881-94 .	1,108	688	1,796	1,278	1,459	2,737
44 years .	2,893	1,643	4,536	3,690	4,104	7,794

It appears that since 1881 we exported about 38 per cent. of our hardware, and 53 per cent. of our textile, manufactures.

Leather.—M'Culloch, in 1835, considered this industry equal, if not superior, to that of iron. The output had been valued by Eden in 1803 at £12,000,000. In the following table is shown the annual consumption of leather from British and imported hides :—

Period.	Tons consumed Yearly.		
	British.	Imported.	Total.
1831-50 . . .	33,000	22,000	55,000
1891-95 . . .	63,000	55,000	118,000

The value of leather goods made yearly is about 59 millions sterling, of which boots and shoes stand for one-half, saddlery one-fourth ; the remainder is made up of sundries and fancy

¹ This table is given in detail in Appendix.

goods. Deducting exports, which average £3,000,000 yearly, the consumption of leather articles is equal to 28 shillings per inhabitant, against 15 shillings in Sir Morton Eden's time. The aggregate output in the last forty years summed up 2100 millions sterling, and in that period Great Britain paid 210 millions for hides imported. According to the census of 1891 there were 430,000 bootmakers and saddlers in the United Kingdom : the output therefore averages £137 per hand, which is less than the average in textile industries.

Glass and Pottery.—These are kindred industries, and of minor importance, the collective output not exceeding £15,000,000 yearly. The first glass factory was established at St. Helens, Lancashire, in 1773, although some noblemen had glass in their windows as early as the sixteenth century. The said factory languished under tremendous taxation, the duty on glass in the reign of George III. being £98 per ton, but this was reduced to £30 under George IV., and finally abolished in 1845. Pottery may be said to have commenced with Josiah Wedgwood, in 1760 ; this son of a peasant did for pottery what Arkwright did for the cotton industry. The factory and village of Etruria were founded by him, and after his death, in 1795, the works were carried on by his descendants. Similar works were established at Belleek, Co. Donegal, in 1861, by Mr. M'Birnie, a Dublin merchant. The Board of Trade returns show that the United Kingdom does not produce enough glass, but has a large surplus of pottery for exportation. The average returns for twenty-three years, ending 1893, were as follows :—

	Imports, £.	Exports, £.
Glass	1,750,000	950,000
Pottery	550,000	2,200,000
Total	<hr/> 2,300,000	<hr/> 3,150,000

M'Culloch estimated consumption in 1835 at 4 shillings per inhabitant ; at present it is probably 8 shillings per head, say 15 millions sterling per annum. The census of 1891 gave

98,000 operatives in glass and pottery ; the average output thus appears to be £153 per hand, against £114 in hardware.

Paper and Printing.—During the reigns of the Four Georges the most oppressive taxes were imposed on printing paper and newspapers, to such a degree that the duty paid on Knight's "Encyclopedia" amounted to £20,000, and left the enterprising publisher without any profit on his great work. In 1841 the consumption of paper in the United Kingdom did not exceed 16,000 tons, little more than double the quantity in the time of George I., a statement published in 1721 showing that it was then 7000 tons, of which only two-thirds were made in England. The abolition of the paper-duties by Mr. Gladstone in 1861 was such a boon to literature that the consumption of paper rose from 83,000 tons in 1864 to 195,000 in 1885. At present there are 400 mills, employing 30,000 hands, and turning out yearly 220,000 tons, worth £9,000,000 sterling : our production of paper is one-fourth of that of Europe. The circulation of newspapers rose from $3\frac{1}{4}$ millions monthly in 1831 to $45\frac{1}{2}$ millions in 1864, and is now approximately 174 millions, having thus multiplied nearly fifty-fold in our own time. If we compare the circulation of 1831 with 1894 we find approximately as follows :—

	Monthly Issue.		No. Yearly per Inhab.	
	1831.	1896.	1831.	1896.
England .	2,750,000	148,000,000	2·3	59·0
Scotland .	160,000	15,500,000	0·8	44·0
Ireland .	330,000	10,500,000	0·5	27·0
U. Kingdom	3,240,000	174,000,000	1·7	53·0

Newspapers consume 120,000 tons of paper yearly, and represent approximately an income of £16,000,000, while the value of books produced yearly is about £5,000,000, so that printing as a manufacture stands for £21,000,000 yearly. About one-fourth of the books are exported. The production of paper is greater than the consumption : the latter averages 12 lbs. yearly, including paper of all descriptions. The census

of 1891 gives 173,000 hands employed in the printing-trade; this gives an average product of £121 per operative. Levi estimated printers' wages at £61 per head, yearly.

Houses and Furniture.—Although houses are not usually ranked among manufactures, it is necessary to classify them as such. If we capitalise the assessed rental (by assuming it to be 6 per cent. of the value) to arrive at the value of new houses built or old ones rebuilt, yearly, we find as follows:—

		Millions £.	Annual Increase, £.
Value in 1821	.	338	
Increase, 1822-61	:	682	17,000,000
Increase, 1862-94	:	<u>1,473</u>	<u>44,000,000</u>
Value in 1894	.	2,493	

In the last thirty years the annual increase has averaged £44,000,000, the assessed rental rising nearly £2,700,000 per annum. Furniture being half the value of houses, the production requisite for new houses will be 22 millions yearly. For the wear-and-tear of the existing furniture (valued at 1100 millions) an allowance of 3 per cent. will be 33 millions. Thus the total annual product of houses and furniture sums up 99 millions sterling. If this sum be divided among 973,000 operatives engaged in the building and furniture trades in 1891, it gives an annual product of £102 each, their wages, according to Levi, averaging £57.

Shipbuilding.—This industry is included among those of iron already mentioned, but deserves special notice, the output averaging about 20 millions sterling per annum. The tonnage and carrying-power of vessels built in the United Kingdom during the present century were:—

Period.	Tons Register.	Carrying-power.	Yearly Average.	
			Tons.	Carrying-power.
1801-40	3,170,000	3,540,000	80,000	88,000
1841-60	3,490,000	6,400,000	175,000	320,000
1861-80	8,170,000	22,300,000	409,000	1,115,000
1881-92	9,250,000	31,270,000	771,000	2,606,000
92 years	24,080,000	68,510,000		

Since 1890 the annual output of British shipyards has averaged 1,150,000 tons register, and as 80 per cent. were steamers, the effective carrying-power of new vessels averaged 3,930,000 tons yearly. No less than 90 per cent. of the vessels were built of steel. Of the world's shipbuilding three-fourths are done in British yards.

Machinery.—According to Professor Zehden there were 2000 machine-shops in Great Britain in 1889, employing 200,000 hands. The value of their output is about 40 millions sterling per annum, two-fifths being exported, three-fifths kept for home use. This item is also included in the general estimate of value of iron manufactures. The export of machinery has doubled in the last fifteen years.

Liquor.—Breweries and distilleries represent an aggregate capital of 200 millions sterling. The production has been as follows:—

Period.	Annual Product.		Per 100 Inhabitants.	
	Beer, Barrels.	Spirits, Gallons.	Beer, Barrels.	Spirits, Gallons.
1801-30 . .	10,200,000	6,200,000	50	30
1851-60 . .	20,800,000	11,300,000	72	40
1890-94 . .	31,900,000	34,000,000	84	89

Breweries consume yearly 70,000,000 bushels of malt (equal to 90,000,000 bushels of grain) and 70,000 tons of sugar: only one per cent. of the beer is exported, the average of home consumption being 30 gallons yearly per inhabitant. One-tenth of the spirits made in the United Kingdom is exported, but, on the other hand, we consume yearly 8,000,000 gallons of imported spirits, so that the total consumption is almost 1 gallon per inhabitant: this is exclusive of wine. The quantity and value of all liquor consumed, and its equivalent in alcohol, are shown thus:—

	Quantity.	Gallons Alcohol.	Value, £.
Beer, barrels . .	31,600,000	56,900,000	79,000,000
Spirits, gallons . .	37,600,000	20,700,000	7,000,000
Wine, " . .	14,000,000	2,100,000	5,000,000
Total	79,700,000		91,000,000

The consumption in the three kingdoms was approximately as follows :—

	Beer, Barrels.	Spirits, Gallons.	Wine, Gallons.
England .	28,100,000	25,400,000	11,300,000
Scotland .	1,500,000	7,500,000	1,300,000
Ireland .	2,000,000	4,700,000	1,400,000
U. Kingdom	81,600,000	37,600,000	14,000,000

Beer is the principal drink in England, spirits in Scotland and Ireland, but it will be seen that the consumption of spirits is also considerable in England. Thus when all kinds of liquor are reduced to their equivalent in alcohol it will be found that the ratio per head is much higher in England than in the sister-kingdoms.

	Gallons of Alcohol.	Value of Liquor, £.	Gallons per Head.	Pence per Head.
England .	66,300,000	79,200,000	2·20	53
Scotland .	7,000,000	5,500,000	1·70	26
Ireland .	6,400,000	6,300,000	1·40	27
U. Kingdom.	79,700,000	91,000,000	2·10	47

The above is exclusive of cider, the consumption whereof reaches 12,000,000 gallons, equal to 800,000 gallons of alcohol. The annual output of the breweries and distilleries is of the value of 85 millions sterling.

Food.—The total value of manufactured food, such as bread, beer, &c. (excluding meat, tea, coffee, imported sugar, wine, &c.), is about 127 millions sterling.

Clothing.—The census of 1891 showed 1,376,000 persons engaged in tailoring, dressmaking, &c., and Levi estimates the earnings of this class at a fraction over £33 per head yearly, this being the worst-paid class of operatives in the United Kingdom. According to the rule laid down in the Introduction, the value of clothing made yearly is 84 millions sterling, or about £61 per hand. There is an annual surplus of £3,000,000 in exports of clothing over imports, which leaves consumption at £81,000,000, equal to 42 shillings per inhabitant, exclusive of boots, but including hats and shirts.

Summary.—The total value of manufactures at various dates was approximately as follows :—

	Millions £ Sterling.		
	1810.	1850.	1895.
Textiles	56	107	191
Hardware	17	68	142
Leather	10	33	59
Houses	9	16	44
Furniture	11	19	55
Food	58	88	127
Clothing	43	66	84
Sundries	51	99	174
Total	255	496	876

It may appear strange that whereas the energy of the nation has multiplied six-fold since 1840, the output of manufactures has not much more than doubled, having amounted in 1840 to about 420 millions sterling ; but the cause is not far to seek. In the first place, the chief increase of energy has been for transport, not for production, viz. :—

Year	Millions of Foot-tons Daily.			Transport Ratio. Per Cent.
	Production.	Transport.	Total.	
1840	6,270	3,450	9,720	36
1860	7,980	8,550	16,530	52
1880	13,790	26,050	39,840	65
1895	15,160	46,250	61,410	75

Productive energy has not trebled since 1840, whereas that employed in transport has grown thirteen-fold. In the second place, the fall of prices must be taken into account, our manufactures having grown much more in volume than in value in the last fifty years.

It has been already shown that the working-power of the inhabitants differs exceedingly, being relatively as 100 per head in England to 140 in Scotland and 55 in Ireland (see p. 61), and if this ratio be held in view in determining approximately the values of manufactures produced in the three kingdoms, the account will stand thus :—

	Hands.	Millions £.	£ per Hand.
England	6,607,000	702	106
Scotland	922,000	136	148
Ireland	656,000	38	58
United Kingdom . . .	8,185,000	876	107

The above gives an average of £23 per inhabitant in England, £32 in Scotland, and only £9 in Ireland, the general average for the United Kingdom being £23, as compared with £15 in France.

MINERALS

Since 1830 the weight of minerals raised has multiplied thirteen-fold, showing thus :—

Year.	Tons of Mineral.			Value, £.
	Coal.	Sundries.	Total.	
1830 . . .	18,100,000	1,980,000	18,080,000	8,500,000
1850 . . .	49,000,000	5,800,000	54,800,000	19,900,000
1870 . . .	110,000,000	16,700,000	126,700,000	46,100,000
1895 . . .	189,700,000	49,500,000	239,200,000	77,900,000

At the present rate of extraction we have enough coal for 550 years without going beyond a depth of 4000 feet, the greatest depth at present being about 2500 feet. One-fifth of what is raised is exported, the home consumption exceeding 150,000,000 tons yearly, of which three-fourths are used for factories, railways, &c.; the domestic consumption being estimated at 1 ton per inhabitant. It is worthy of remark that the output of British collieries since 1850 almost equals in value the product of all the gold and silver mines of the world in the same interval, viz. :—

Period.	Value in Millions £ Sterling.			
	Gold.	Silver.	Total.	British Coal.
1851-70 . . .	546	187	733	410
1871-94 . . .	588	515	1,103	1,223
44 years . . .	1,134	702	1,836	1,633

The loss of life that attends coal-mining averages one man for every million of tons raised, whereas before 1870 the

average was one killed for 350,000 tons. The total number of men employed in mines and quarries in 1895 was 838,000, that in quarries being 105,000: the number of miners underground was 590,000. If we exclude quarries,¹ the mining output in tons compares thus with the number of hands employed:—

Year.	Tons raised.	Miners.	Tons per Man.
1820 . .	15,200,000	165,000	92
1860 : :	88,300,000	497,000	180
1895 . .	209,200,000	733,000	285

Each miner raises nearly a ton of mineral daily, and the product of his labour is worth about 7 shillings. The report of the Mining Commission of 1893 shows that "royalties" take more than 7 per cent. of the gross product of mining, and average 7 pence per ton on all minerals raised: the production of coal and ironstone and amount of royalty in the three kingdoms in 1889, according to the report, were:—

	Coal, Tons.	Ironstone.	Royalties, £.
England . . .	153,600,000	13,420,000	4,190,000
Scotland : :	23,200,000	1,060,000	678,000
Ireland . . .	100,000	160,000	6,000
United Kingdom .	176,900,000	14,640,000	4,874,000

England stands for 88, Scotland 12, per cent. of the mining industry of the United Kingdom. The average wage of miners in 1890 was £72, and this would make their earnings sum up £60,500,000, which is more than three-fourths of the value of minerals raised, viz. :—

Year.	Coal.	Ores, &c.	Total, £.	Miners.	£ per Man.
1820 .	5,300,000	1,400,000	6,700,000	165,000	40
1860 .	20,100,000	10,700,000	30,800,000	497,000	62
1894 .	62,700,000	15,200,000	77,900,000	838,000	93

In the above column of ores are included not only metallic, but also stone, slate, salt, &c. The value of metals produced

¹ The stone quarries of the United Kingdom in 1895 yielded 29,500,000 tons of building stone, worth about £8,000,000; the slate quarries, 460,000 tons of slate, valued at £1,200,000.

from British ores rose from £7,100,000 in 1840 to £18,200,000 in 1894. Reference has been already made to these metals in the chapter on manufactures.

COMMERCE

Down to the reign of William IV. the balance of trade was called favourable, that is, exports exceeded imports in value; but with better times, during the present reign, we came to have a healthy surplus of imports, the most unequivocal proof of commercial prosperity and increasing national wealth. The progress of British commerce in seventy-five years has been as follows :—

Year.	Millions £ Sterling.			£ per Inhabitant.
	Imports.	Exports.	Total.	
1820 . . .	30	44	74	3·5
1850 . . .	99	70	169	6·2
1880 . . .	411	286	697	20·2
1895 . . .	417	286	703	18·1

The above figures would appear to show a very trifling increase of trade since 1880; nevertheless the volume of merchandise has greatly increased. There has been in the interval a notable decline in prices, the index-number of price-level in Sauerbeck's tables showing a fall of 30 per cent. since 1880, so that if the merchandise exchanged in 1895 were taken at the prices of 1880 it would represent not 703 millions, but 1004 millions. The principal items of import trade have been :—

	Millions £ Sterling.			
	1854.	1870.	1880.	1895.
Grain . . .	23	37	70	50
Cotton . . .	20	54	43	30
Meat . . .	4	8	27	36
Wool . . .	7	16	26	28
Sugar . . .	11	18	23	18
Dairy produce . . .	3	12	21	27
Timber . . .	12	13	17	16
Minerals . . .	3	9	16	19
Sundries . . .	69	136	168	193
Total . . .	152	303	411	417

The greatest relative increase has been in meat, dairy products, and minerals, which have risen six- to eight-fold since 1854. Meantime the real increase has been greater still than shown in the above table, as there has been, as already stated, a considerable fall of prices in the last forty years.

The trade relations of the United Kingdom with all countries are shown in the following table of imports and exports, being the average for five years ending December 1893 :—

	Millions £ Sterling.			
	Imports from.	Exports to.	Total.	Ratio.
United States . . .	100	41	141	19·4
France . . .	44	23	67	9·3
Germany . . .	26	30	56	7·7
Holland . . .	28	16	44	6·0
Russia . . .	22	9	31	4·3
Various . . .	106	98	204	28·0
Foreign countries . . .	326	217	543	74·7
India . . .	32	32	64	8·8
Australia . . .	30	23	53	7·3
Canada . . .	18	9	22	3·0
Various . . .	22	23	45	6·2
British Colonies . . .	97	87	184	25·3
The World . . .	423	304	727	100·0

Our trade with the United States far surpasses our dealings with any other country, and exceeds the aggregate of our trade with India, Australia, and Canada, which is the more remarkable as the fiscal policy of the United States in recent years has apparently had for its main object to cripple commercial relations with Great Britain. It is, moreover, noteworthy that our trade with Canada is less than half what it is with Australia, although the former is much nearer. Each Australian has £13 of trade yearly with the Mother Country, each Canadian only £4. Our trade with the Colonies is one-fourth of the total, precisely the same ratio as forty years ago.

Shipping.—The maritime carrying-trade of the British nation has no parallel in ancient or modern times; its

greatest increase has been since the abolition of the Navigation Laws in 1849, although the said laws had for object the supremacy of the British flag on sea. The following table shows the nominal tonnage and carrying-power at various dates:—

Year.	Vessels.	Tons Register.	Carrying-power.	Per Vessel, Tons.
1800 . . .	17,410	1,856,000	1,856,000	106
1840 . . .	28,962	3,311,000	3,596,000	124
1881 . . .	30,531	8,535,000	17,850,000	585
1894 . . .	27,310	10,380,000	29,560,000	1,070

The average carrying-power per vessel has nearly doubled since 1881, so rapidly have steamers come to supplant sailing-vessels. In 1892 more than half the carrying-trade on the high seas was done by British vessels, the tonnage of port-entries showing as follows:—

Ports of United Kingdom	Tons Register.			Total.
	British.	Other Flags.	Total.	
British Colonies .	27,040,000	10,630,000	37,670,000	
United States .	30,210,000	9,410,000	39,620,000	
Other countries .	9,820,000	8,360,000	18,180,000	
Total .	115,350,000	104,840,000	220,190,000	

In the foregoing tables Colonial shipping is included with British. If we consider only that of the United Kingdom the returns show thus:—

Year.	Tons Register.			Carrying-power, Tons.
	Sail.	Steam.	Total.	
1840 . . .	2,480,000	90,000	2,570,000	2,840,000
1880 . . .	3,850,000	2,725,000	6,575,000	14,750,000
1894 . . .	2,990,000	5,970,000	8,960,000	26,870,000

The increasing efficiency of our seamen is seen on comparing their number at various dates with nominal tonnage and carrying-power:—

Year.	Tons Register.	Carrying-power.	Tons per Man.		Carrying-power.
			Seamen.	Register.	
1830 . . .	2,202,000	2,260,000	131,000	168	173
1850 . . .	3,565,000	3,890,000	148,000	241	263
1870 . . .	5,691,000	9,020,000	196,000	290	460
1894 . . .	8,960,000	26,870,000	240,000	374	1,120

The effective carrying-power per seaman has quadrupled since 1850, that is to say, one sailor now can do as much work as four did fifty years ago.

Internal Trade.—The internal trade of the United Kingdom at various dates was approximately as follows:—

	Millions £ Sterling.				
	1812.	1836.	1850.	1870.	1896.
Agricultural products	171	229	225	252	230
Manufactures, &c. . . .	262	370	516	710	957
Imports	25	47	99	303	417
Total	458	646	840	1,265	1,604

It appears that while our trade with foreign countries has quadrupled since 1850, our internal trade has not quite doubled. The latter in 1895 was distributed among the three kingdoms approximately as follows:—

	Millions £ Sterling.			
	England.	Scotland.	Ireland.	U. Kingdom.
Agricultural products	147	28	55	230
Manufactures	702	136	38	876
Mines, forestry, &c. . . .	74	13	...	87
Imports	334	51	32	417
Total	1,257	228	125	1,610

From the above it would appear that 78 per cent. of the industries of the United Kingdom correspond to England, 14 to Scotland, and 8 per cent. to Ireland. The average all round is £41 per inhabitant. No records are kept of the value of imported merchandise consumed separately in the three kingdoms, but it may be assumed that the proportions will be the same as those of port-entries, sea-going and coast-wise, of which England stands for 79 per cent., Scotland 13, and Ireland 8 per cent., and on this basis the values are put down in the above table.

RAILWAYS

The first line was opened in 1825 from Stockton to Darlington, and the mileage and cost of construction were as follows :—

	Miles Open.	Cost, £.	£ per Mile.
1850	6,620	240,800,000	36,300
1894	20,910	985,400,000	47,100

English and Scotch lines have been the dearest in the world for construction, having averaged, for the island of Great Britain, £52,600 per mile, or more than four times the average cost in Ireland. The mileage and capital in 1894 were :—

	Miles Open.	Cost, £.	£ per Mile.
England	14,555	811,800,000	55,800
Scotland	3,330	134,400,000	40,300
Ireland	3,045	39,200,000	12,900
United Kingdom	20,910	985,400,000	47,100

Although the traffic on Irish lines is light, owing to the scanty population and backward condition of the country, the earnings give a larger profit on capital than in England or Scotland, the returns for 1894 showing :—

	Traffic per Mile, £.			
	Receipts.	Expenses.	Net.	On Capital.
England	4,944	2,794	2,150	8·8
Scotland	2,698	1,412	1,286	3·2
Ireland	1,115	605	510	4·0
United Kingdom	4,034	2,259	1,775	8·8

The goods traffic in 1894 consisted of 324 million tons of merchandise, of which 86 per cent. corresponded to England, 12½ to Scotland, and 1½ to Ireland. Before the introduction of railways the ordinary freight charge on canals was 40 shillings per ton per 100 miles; at this rate the goods carried by rail in 1894 would have paid 201 millions sterling (the average length of haulage in the United Kingdom being 31 miles), but they paid only 47 millions, which shows a saving of 154 millions in freight, equal to nearly 10 per cent. on the value of internal trade of the three kingdoms.

BANKING

This is an industry very closely related to commerce; the estimates of banking-power, according to the *British Almanac* and the *Banker's Magazine*, were at various dates as follows:—

Year.		£	£ per Inhabitant.
1840	.	132,000,000	5·0
1874	.	782,000,000	24·1
1894	.	960,000,000	25·0

Banking-power has multiplied seven-fold since 1840, showing in 1894 as follows:—

	Capital.	Issue.	Deposits.	Millions £ Sterling.	
				Total.	Total.
English	58·4	26·3	445·2	529·9	
Scotch	9·3	6·6	92·1	108·0	
Irish	7·1	5·8	41·7	54·6	
Foreign	47·6	...	220·0	267·6	
Total	122·4	38·7	799·0	960·1	

If foreign banks be left out, the proportions of banking-power will be thus:—England, $76\frac{1}{2}$; Scotland, $15\frac{1}{2}$; Ireland, 8 per cent. of total. As regards the Bank of England, its business has doubled in seventy-four years, viz.:—

Year.	Capital.	Issue.	Deposits.	Millions £ Sterling.	
				Total.	Total.
1820	14·5	23·5	4·1	42·1	
1894	14·5	25·1	40·5	80·1	

While the Bank of England has only doubled, the banking business of the country, as shown in the first table, has multiplied eleven-fold. According to the Statesman's Year-Book there are 178 joint-stock banks, with 4138 branches or bank-offices in the United Kingdom. Also 41 private banks, with aggregate capital amounting to 12 millions, and deposits 64 millions, which are not included in the foregoing statement of the banking-power of the nation. In that statement the banking capital is merely the amount paid up, but the market value of

the shares in October 1894 amounted to £241,200,000, being an average premium of 98 per cent., which is the more remarkable as only 36 per cent. of the nominal capital was paid up. Shareholders were still liable for 218 millions to be called up if occasion required. If the effective capital of our banks were supposed to be the present market value of the shares, say 241 millions, and that we were to include the capital and deposits in private banks, the total banking-power of the nation would be raised from 960 to 1155 millions sterling.

EARNINGS AND WEALTH

The earnings of the people at various dates were approximately as follows :—

	Millions £ Sterling.			
	1812.	1836.	1860.	1895.
Agricultural . . .	103	137	147	138
Manufacturing . . .	127	180	310	438
Mines, forests, &c. . .	6	12	31	87
Trade	46	65	111	161
Transport	49	69	118	169
House-rent	15	33	61	150
Domestics	10	22	40	100
Public service	11	27	35	51
Professions	37	55	85	129
Total	404	600	938	1,423

Comparing the above totals with population, we find that the ratio per head has been constantly rising; and if we reduce the ratio at each date to its equivalent in wheat, the increase of income is still greater, viz. —

Year.	Millions £.	Population.	£ per Head.	Wheat, Bushels.
1812 . . .	404	18,500,000	22	35
1836 . . .	600	25,000,000	24	76
1860 . . .	938	29,000,000	32	94
1895 . . .	1,423	39,100,000	36	245

Average earnings per inhabitant have risen 50 per cent. in money since 1836, and have trebled in wheat. The shares that at present fall to the three kingdoms are as follow :—

	Millions £ Sterling.			
	England.	Scotland.	Ireland.	U. Kingdom.
Agricultural . . .	88	17	33	138
Manufacturing . . .	351	68	19	438
Mines, forests, &c. . .	74	13	0	87
Trade . . .	126	23	12	161
Transport . . .	137	21	11	169
House-rent . . .	132	14	4	150
Domestics . . .	88	10	2	100
Public service . . .	44	4	3	51
Professions . . .	104	17	8	129
Total . . .	1,144	187	92	1,423

This gives an average income of £38 per head in England, £45 in Scotland, and £20 in Ireland.

Wealth.—Taking the returns of property which paid death-duties in the three kingdoms, and the number of persons, adults and infants, who died, we find the averages for five years to December 1893 were as follows:—

	Property, £.	Deaths.	£ per Head.
England . . .	185,200,000	560,000	331
Scotland . . .	20,500,000	78,000	263
Ireland . . .	12,200,000	86,000	142

Applying these ratios to the living population in 1895, we find:—

	Population.	£ per Head.	Wealth, Millions £.
England . . .	30,400,000	331	10,062
Scotland . . .	4,160,000	263	1,094
Ireland . . .	4,580,000	142	650
United Kingdom .	39,140,000	302	11,806

The amount in 1895 is more than four times Colquhoun's estimate in 1812, showing that the wealth of the nation, as McCulloch estimated in 1835, doubles in about forty years. The principal components at various dates were approximately as follows:—

UNITED KINGDOM

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	Millions £ Sterling.		
Land . . .	1,812	1,860	1,895
Cattle and implements	334	350	391
Railways	348	985
Factories . . .	85	207	292
Houses . . .	815	813	2,200
Furniture . . .	250	407	1,100
Merchandise . . .	180	555	805
Bullion . . .	15	105	109
Shipping . . .	27	32	104
Sundries . . .	199	2,641	4,134
Total . . .	2,737	7,206	11,806

If we take the ratios of the income tax assessments in 1860 as indicating the proportions of wealth, we find :—

	Ratio.	Millions £.	£ per Inhab.
England . . .	84·1	6,061	303
Scotland . . .	9·0	648	212
Ireland . . .	6·9	497	84
Total . . .	100·0	7,206	249

Comparing the figures of 1860 and 1895, we find :—

	Millions £.			Rate of Increase, Per Cent.
	1860.	1895.	Increase.	
England . . .	6,061	10,062	4,001	66
Scotland . . .	648	1,094	446	68
Ireland . . .	497	650	153	31
U. Kingdom . . .	7,206	11,806	4,600	64

The components of wealth in 1860 and 1895 were :—

	England.		Scotland.		Ireland.	
	1860.	1895.	1860.	1895.	1860.	1895.
Land . . .	1,289	1,202	189	188	270	296
Cattle, &c.	247	250	40	46	63	95
Railways . . .	289	812	39	134	20	39
Factories . . .	166	234	32	45	9	18
Houses . . .	672	1,962	60	187	41	51
Furniture . . .	336	981	30	93	20	26
Merchandise . . .	433	629	79	114	43	62
Sundries . . .	2,629	3,992	179	287	31	68
Total . . .	6,061	10,062	648	1,094	497	650

The annual accumulation in the above interval of thirty-five years compares with population as follows:—

	Accumulation, £ per Annum.	Mean Population.	Accum. per Inhab., Shillings.
England . .	114,300,000	24,840,000	92
Scotland . .	12,700,000	3,580,000	71
Ireland . .	4,400,000	5,250,000	17
U. Kingdom . .	131,400,000	33,670,000	78

Counting 300 working days to the year, it appears that the average accumulations during the last thirty-five years were almost 4 pence a day in England per inhabitant, 3 pence in Scotland, and a little over a half-penny in Ireland; say 3 pence in the whole United Kingdom.

Land.—In 1812 land constituted nearly half the national wealth, but now it is only one-seventh. The area of the three kingdoms is 72 million acres, and the total value is 1686 millions sterling, which gives an average of £23 per acre; but if we eliminate 24 million acres of waste lands, which are valueless, the cultivated portion and its value will stand thus:—

	Acres.	Millions £.	£ per Acre.
England . .	27,600,000	1,202	43·5
Scotland . .	4,800,000	188	39·2
Ireland . .	15,300,000	296	19·3
U. Kingdom . .	47,700,000	1,686	35·3

The total agricultural wealth of the United Kingdom, between land, cattle, implements, &c., is 2077 millions sterling, equal to £54 per inhabitant, as compared with £76 in 1812.

Railways.—In the interval between 1860 and 1894 the new capital expended in railway construction was 637 millions, or nearly 20 millions per annum. No country in the world, except the United States, has so large a railway capital as the United Kingdom.

Factories.—These are included in the assessed rental of houses, and hence the value cannot be exactly determined, but we find in the United States that their value is one-third

of the manufactured output, and the same is probably true in all countries.

Houses.—The value of house-property, including factories, and the number of houses at various dates, are shown in the following table :—

Year.	No.	Rental, £.	Value, Millions £.	£ per House.
1821	3,572,000	20,300,000	338	95
1841	4,775,000	41,500,000	692	145
1861	5,131,000	61,200,000	1,020	199
1881	6,485,000	117,500,000	1,960	302
1894	7,360,000	149,600,000	2,493	339

The average value of each house has almost quadrupled since 1821, and the aggregate value has multiplied seven-fold, while population has not quite doubled. Looking back to 1812 we find, according to Colquhoun, that land was then $3\frac{1}{2}$ times the value of houses, whereas in 1894 houses exceeded land by 800 millions sterling. The number, rental, and value of houses at the last census (1891) in the three kingdoms were as follows :—

	No.	Rental, £.	Value, Millions £.	£ per House.
England	5,461,000	123,700,000	2,062	370
Scotland	818,000	13,200,000	220	268
Ireland	871,000	3,600,000	60	69
U. Kingdom	7,150,000	140,500,000	2,342	328

If factories be deducted from house property, the value of the latter in 1894 will be, as already stated, 2200 millions. The values of furniture, merchandise, and shipping are according to the bases laid down in the Introduction. Bullion is according to semi-official estimates. Sundries comprise all the rest, say 4134 millions, and it is believed that half this amount consists of investments abroad, in loans, railways, &c.

Distribution of Wealth.—On this subject the probate returns and average number of deaths in five years, ending December 1893, give the following results :—

Class.	Deaths, No.	Property, £.	Average, £.
Wealthy . . .	478	63,800,000	133,000
Affluent . . .	5,544	70,100,000	12,600
Above want . . .	43,898	30,900,000	703
No assets . . .	341,080	...	...
Children . . .	833,000	...	...
Total . . .	724,000	164,800,000	

The above is exclusive of property which paid succession duty, averaging in the same years £53,100,000, making in all £217,900,000 per annum. If we were to distribute the whole wealth of the United Kingdom on the basis of the above probate returns for the last five years, the result would be as follows :—

Class.	Number.	Millions, £.	£ per Head.
Rich	327,000	9,120	28,000
Middle	2,380,000	2,120	900
Working	18,210,000	566	31
Children	17,940,000	...	...
Population	38,857,000	11,806	302

Nearly 80 per cent. of the total wealth is held by 1½ per cent. of the adult population. The middle class stands for 11 per cent. of population, and holds 18 per cent. of wealth. The same probate returns point to a congestion of wealth among the richest class of the community, viz. :—

Estate.	Yearly.			Ratio of Progress.		
	1840.	1877.	1889-93.	1840.	1877.	1893.
Over £5,000 .	1,989	4,478	5,367	100	223	270
£100 to £5,000 .	17,936	36,438	44,553	100	203	249

Fortunes over £5000 are multiplying much faster than those under £5000, which is the reverse of what is desirable, and this congestion seems to increase in intensity the higher we go. The latest statistical abstract shows the values of estates probated in the last twelve years, 1882-93. If we compare the last four years with the first four years of the period, we find the annual averages of estates as follows :—

UNITED KINGDOM

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	1882-85. £	1890-93. £	Increase, Per Cent.
Over £100,000 . . .	32,700,000	44,100,000	35
Under " . . .	102,000,000	125,500,000	23

Here we see that the progression of estates over £100,000 is as three to two, compared with estates under that figure. There is, meantime, one very cheering feature in these probate tables, namely, that the ratio of persons above want rises steadily, in spite of the above-mentioned congestion of wealth. The following table shows the relative progress of population and of estates over £100 since 1840:—

	1840.	1877.	1893.
Population	100	126	148
Estates over £100	100	205	251

Thus in fifty-three years population has risen 46 per cent., and the number of persons who left estates of more than £100 at their death, 151 per cent.; in other words, the class of society which may be considered above the reach of want has grown since 1840 three times faster than the general population. And if we go back only sixteen years, to 1877, we find that population has risen 16 per cent., while the easy class has increased 22 per cent., showing beyond doubt that the proportion of people whose life is a constant struggle to keep the wolf from the door diminishes year by year. If we compare the deaths of adults with the number of persons who left estates over £100, we find thus:—

Year.	Deaths.	Estates.	Estate Ratio.
1840	318,000	19,925	6·2
1877	360,000	40,916	11·3
1888-93	391,000	49,920	12·8

The improved condition of the working classes is evident from the increased number of depositors in savings banks; it was less than 4 per cent. of the population of the United Kingdom in 1850, and has now risen to 19 per cent. Never-

¹ The number of deaths of adults for the United Kingdom in 1840 is estimated after that of England, there being no returns for Scotland and Ireland so far back.

theless, the sufferings of the indigent class in our large towns are greater than ever before; the condition of this class has been aptly described as far worse than that of Hottentots. The evil arises partly from habits of intemperance, but much more from want of suitable dwellings at a moderate rent.

FINANCES

The revenue of the United Kingdom has not doubled since 1820, the gross amounts collected showing as follows:—

	Millions £ Sterling.			
	1820.	1858.	1880.	1895.
Excise . . .	16·2	16·3	25·3	30·5
Customs . . .	22·6	22·5	19·3	20·3
Stamps . . .	6·5	7·1	10·4	16·7
Land-tax . . .	1·4	1·2	1·1	1·0
Income-tax . . .	...	5·6	9·2	15·6
Post-office . . .	1·4	2·5	7·8	18·3
Sundries . . .	6·4	8·7	6·3	4·3
Total . . .	54·5	58·9	79·4	101·7

Revenue has kept pace with population, the average being now 52 shillings per inhabitant, the same as in 1820. When we consider that the earnings of the people are now 50 per cent. higher, per inhabitant, than they were seventy years ago, it will be seen that the incidence of taxation is only two-thirds of what it was then. British finances, on the whole, have been much better handled than those of other countries, and our national debt has been reduced. The totals of revenue and expenditure for fifty-four years are shown in the subjoined table:—

Period.	Customs.	Excise.	Post-office.	Taxes.	Total.
1841-60 .	464	326	46	384	1,220
1861-80 .	454	475	109	493	1,531
1881-94 .	277	840	150	485	1,252
54 years .	1,195	1,141	805	1,362	4,003

Millions £ Sterling.

Period.	Government.	Army.	Navy.	Debt.	Total.
1841-60 .	224	244	176	581	1,225
1861-80 .	369	338	218	540	1,465
1881-94 .	417	257	183	362	1,219
54 years .	1,010	839	577	1,483	3,909

Customs.—The tendency of fiscal legislation during the last half-century has been to lighten customs-dues, which fall mostly on the working classes. In 1864 they averaged 15 shillings per inhabitant, and in 1895 a little over 10 shillings. A sum of £200,000 is taken from the Customs and given to local authorities, wherefore the amount in the Budget appears £200,000 less than collected.

Excise.—This is almost exclusively a tax on liquor, which has doubled since 1852, but is actually less per inhabitant than it was twenty years ago, viz. :—

Year.	Excise.	Population.	Shillings per Head.
1852 . . .	15,800,000	27,700,000	11·4
1874 . . .	27,100,000	32,400,000	16·7
1895 . . .	30,500,000	39,100,000	15·6

A portion of the revenue from this tax, amounting to £4,600,000, is handed over to local authorities ; hence this item in the Budget appears as £25,900,000.

Income-tax.—This was first introduced by Pitt in 1798, and was abolished in 1816, after the close of the Bonaparte wars. The highest rate was in 1808, namely 24 pence in the pound, when it produced £16,500,000. It was revived by Peel in 1842, but Ireland was exempted till 1853. The product in fifty-three years has been as follows :—

Period.	Amount.	Per Annum.	Product per Penny, £.	Pence per Inhabitant.
1842-61 .	157	7·8	910,000	77
1862-81 .	148	7·4	1,630,000	57
1882-94 .	109	8·4	2,070,000	54
53 years .	414	7·8	1,470,000	64

Pitt's tax embraced all incomes over £60 a year, with higher rates for those over £150. Peel's began at £100, charging 5 pence in the pound up to £150, and 7 pence over the latter figure. It remained so until the Crimean War, which drove up the rate to 16 pence in 1855, but in 1858 it was reduced to 5 pence. The minimum was in 1875, when it fell to 2 pence, but since 1878 it has ranged between 5 pence and 8 pence, the latter being the present rate. No incomes under £160 are taxed, an abatement of 40 per cent. is allowed between £160 and £400, and 25 per cent. between the latter and £500.

Stamps.—This source of revenue has doubled in forty years, and may be said to consist of three items, viz. :—

	1853, £.	1874, £.	1895, £.
Death-duties .	2,400,000	5,500,000	10,800,000
Deeds . .	1,400,000	2,000,000	3,300,000
Bills, &c. .	3,300,000	3,000,000	2,600,000
Total . .	7,100,000	10,500,000	16,700,000

Since 1889 a portion of the death duties (one-fifth) is handed over to local authorities, and hence stamps figure in the Budget of 1895 for no more than £14,600,000.

Post-office.—This department leaves a large profit yearly, since the postal reform of 1840, when penny postage was introduced; the aggregate receipts in fifty-four years have exceeded 300 millions sterling, of which 30 per cent. was profit, viz. :—

Period.	Millions £ Sterling.		
	Receipts.	Expenses.	Profit.
1841-64	61	39	22
1865-84	130	91	39
1885-94	114	85	29
54 years	805	215	90

In the above table are included the earnings of the Telegraph Department, which reach £2,600,000. The telegraphic service in the three kingdoms was taken over by the State in

1870; sixpenny telegrams were introduced in 1885, since which year the number of messages has doubled, at present passing 70,000,000 yearly.

Expenditure.—Although the imperial revenue in 1895 reached £101,700,000, the expenditure for national purposes was considerably less, a sum of £7,000,000 having been handed over to local authorities. The actual expenditure was only £93,900,000. Dividing the past fifty-four years into three epochs, the annual expenditure has averaged thus:—

	Millions £.			Shillings per Inhabitant.		
	1841-60.	1861-80.	1881-94.	1841-60.	1861-80.	1881-94.
Army . .	12·2	16·9	18·4	8·8	12·3	10·1
Navy . .	8·8	10·9	13·1	6·4	8·0	7·2
Government .	11·2	18·5	29·8	8·1	13·4	16·3
Debt . .	29·1	27·0	25·8	21·2	17·1	14·1
Total . .	61·3	73·3	87·1	44·5	50·8	47·7

Incidence.—About 83 per cent. of the national revenue is raised by taxation, say £78,700,000 in 1895. If we compare taxation with the people's earnings we find:—

Year.	Millions £ Sterling.		
	Earnings.	Taxation.	Tax Ratio.
1860	938	66	7·1
1895	1,423	79	5·5

A similar result is obtained if taxation be compared with income-tax assessments, showing that the burthen of public charges is now much lighter than it was thirty years ago. Besides imperial taxes there are local rates and tolls, about £43,000,000, which, added to the former, make a total of £122,000,000, or 8½ per cent. of national earnings. Taxation may, therefore, be considered light, as compared with most other countries.

An inquiry was recently made by Parliament into the relative shares of national taxation borne by Great Britain and Ireland, when the following statement by the Treasury was handed in:—

Millions £ Sterling.

Year.	Amount Collected.			Real Revenue.		
	G. Britain.	Ireland.	U. Kingdom.	G. Britain.	Ireland.	U. Kingdom.
1820	52·6	5·3	57·9	51·4	5·8	56·7
1830	50·9	4·5	55·4	49·6	5·5	55·1
1840	47·3	4·6	51·9	46·3	5·4	51·7
1850	53·1	4·3	57·4	51·9	4·9	56·8
1860	63·9	7·1	71·0	61·4	7·7	69·2
1870	68·3	7·8	75·6	65·6	7·4	73·0
1880	72·3	7·8	80·1	69·8	7·3	77·1
1890	85·6	9·0	94·6	84·9	7·9	92·8

From the above it appears that Ireland pays $8\frac{1}{2}$ per cent. of the revenue of the United Kingdom. The incidence of imperial revenue, as compared with earnings, shows as follows :—

	Earnings, £.	Revenue, £.	Ratio.
Great Britain	1,331,000,000	84,900,000	6·37
Ireland	92,000,000	7,800,000	8·59
United Kingdom . . .	1,423,000,000	92,800,000	6·52

If taxation were adjusted in proportion to earnings the share that corresponds to Ireland would be exactly £6,000,000 per annum, or 24 per cent. less than at present.

Debt.—At the accession of George III. the National Debt was under 150 millions, and before his death it reached the enormous sum of 900 millions. The following table shows debt and national wealth at various dates :—

Year.	Millions £.		Ratio of Debt.	Population.	Debt per Inhabitant.
	Debt.	Wealth.			
1763	147	1,100	13·4	8,700,000	21
1816	900	2,900	31·0	19,500,000	46
1860	823	5,927	14·0	28,900,000	28
1895	660	11,806	5·6	39,100,000	17

Although the debt is now nominally 660 millions it is really no more than 629 millions, if we deduct the Suez Canal shares and other assets held by the State. The burthen of debt, as compared with wealth, is now less than half what it was 130 years ago, at the beginning of the reign of George III. At the close of the Bonaparte wars, in 1816, it was equal to nearly one-third of the national wealth, or relatively six times

greater than at present. The American war of 1775-81 added 106 millions to the debt, and the Bonaparte wars about 600 millions, the loans issued having been as follows :—

	Millions & Sterling.		
	1776-86.	1793-1815.	Total.
Issue	106	788	894
Realised	92	470	562
Loss	14	318	332

This loss of 332 millions was more apparent than real, for between August 1788 and December 1821, the Commissioners redeemed 420 millions at a cost of 277 millions, a saving of 143 millions, leaving the net loss only 189 millions. According to Lowe the French war cost Great Britain no less than 1109 millions sterling, and Cohen's estimate, in 1823, is nearly the same. Lowe places ordinary expenditure at 18 millions a year down to 1802, and 22 millions after that date, making the account stand thus :—

Period.	Millions & Sterling.		
	Ordinary.	War.	Total.
1793-1805	246	404	650
1806-1815	220	705	925
23 years	466	1,109	1,575

Cohen's estimate of war expenditure is 1158 millions, or 49 millions more than Lowe's, the money having been raised as follows :—

Period.	Millions & Sterling.			
	Taxes.	Loans.	Total.	Per Annum.
1793-1805	150	264	414	32
1806-1815	419	325	744	74
23 years	569	589	1,158	50

It must be observed that the actual increase of debt was less than the above amount of loans issued ; it was in fact 458 millions, the difference of 131 millions being accounted for by redemption of old loans. The official statement of funded debt in 1792, before the outbreak of the war, showed capital £279,000,000, annual interest £10,060,000, and in 1816 it was (exclusive of the Irish debt) as follows :—

	Capital, £.	Interest, £.
5 per cents. . . .	144,000,000	7,200,000
4 per cents. . . .	75,000,000	3,000,000
Various stocks . . .	518,000,000	18,900,000
Total funded . . .	<u>737,000,000</u>	<u>29,100,000</u>

Hence it would appear that the actual cost of the French war was 1106 millions, of which 45 per cent. was met by means of loans and 55 per cent. by taxes. In 1817 the Irish Exchequer was suppressed, and the debt of that kingdom, amounting to £113,500,000, added to the British. From that time the national debt steadily declined until 1854, when the Crimean war caused an addition of 25 millions. The total of funded and unfunded debt in 1860 was 823 millions, and it is now, as already shown, only 629 millions, being a reduction of 194 millions in thirty-five years, say $5\frac{1}{2}$ millions yearly.

Much more striking has been the reduction of interest; the annual charge, which averaged 26 shillings per inhabitant in 1821, is now only 8 shillings. Vansittart in 1822 inaugurated an epoch of conversion of debt by calling in all the 5 per cent. stock, for which the holders were glad to take new 4 per cents., and thus saving £1,500,000 of interest. Two years later Robinson converted the 4 per cents. into $3\frac{1}{2}$ per cents., and after him came Goulburn, whose conversions effected a reduction of 2 millions a year. In later times Gladstone's measures caused a saving of £500,000, and finally in 1888 Goschen reduced interest by £1,400,000. Thus we find that the interest on funded debt is now only £16,200,000, that is 40 per cent less than in the year when Vansittart made his first conversion. In the meantime local debts have multiplied in late years, rising from 153 millions in 1880 to 230 millions in 1894, but these debts are mostly of a reproductive character, since they represent municipal and sanitary works. Adding together the national and local debts of the United Kingdom, we have a total of about 860 millions, equal to $7\frac{1}{2}$ per cent of the wealth of the nation.

IV

FRANCE

At the beginning of the century France had nearly double the population of the United Kingdom, but at present the advantage is on our side, viz. :—

	1801.	1895.	Increase. per Cent.
France	27,350,000	88,350,000	41
United Kingdom	15,720,000	89,130,000	149

Frenchmen are little inclined to emigrate, and the number actually living abroad is less than that of foreigners residing in France, the census of 1891 showing 1,130,000 for the latter and 788,000 for the former. The total emigration of fifty years down to 1890, and the number of French living abroad in 1891, were approximately as follows :—

To	Emigrants.	Living in 1891.
Algeria	400,000	271,000
United States	294,000	113,000
Other parts	686,000	404,000
Total	1,380,000	788,000

During the above period of fifty years emigration averaged 28,000 per annum, or less than 1 per thousand of the population, against 7 per thousand from the United Kingdom. There was meantime a large migration of peasantry into the chief cities, which have trebled their population since 1835, viz. :—

Year.	Paris.	Lyons.	Marseilles.	Total.
1835	881,000	162,000	125,000	1,168,000
1891	2,450,000	415,000	405,000	3,270,000
	109			

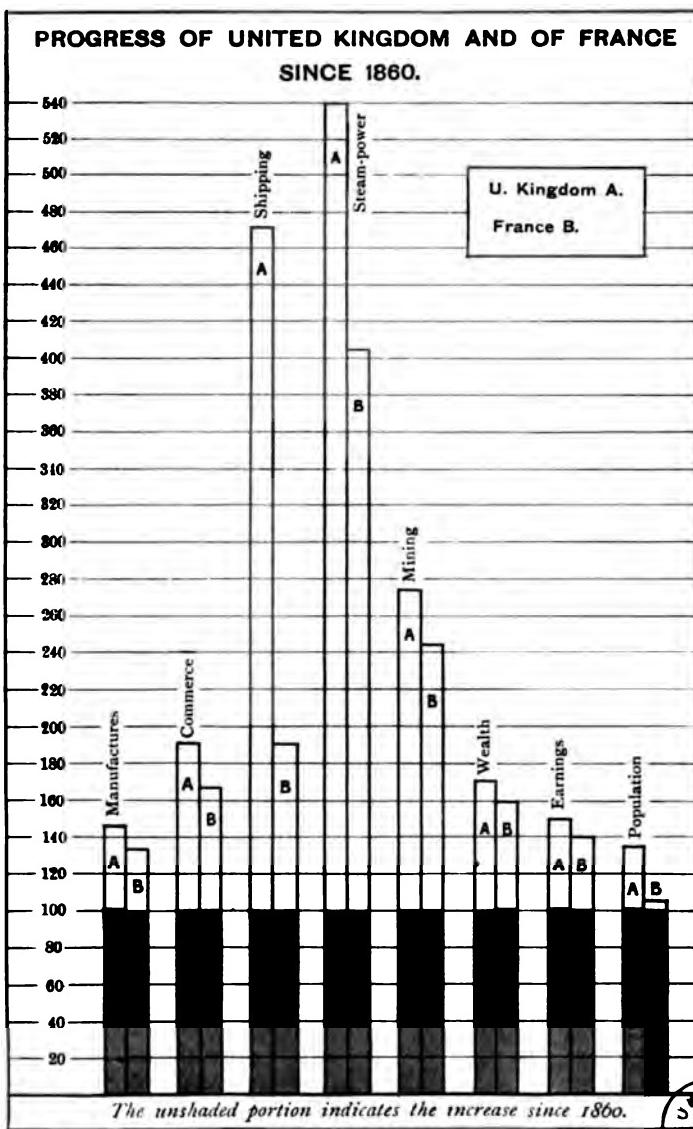
Since 1835 the aggregate population of the above three cities has risen 180 per cent., that of the rest of France only 8 per cent. As regards the distribution of sexes there is only a slight excess of females, and the surplus seems to diminish as time goes on, probably owing to the influx of Belgian, Italian, and other foreign workmen. The number of females to 1000 males has declined from 1058 in 1821 to 1014 at last census. This is the reverse of what occurs in England, where the surplus of females keeps rising in ratio. Vital statistics show that whereas forty years ago population increased about 5 per thousand yearly, there has been no increase of late years, deaths exceeding births, viz. :—

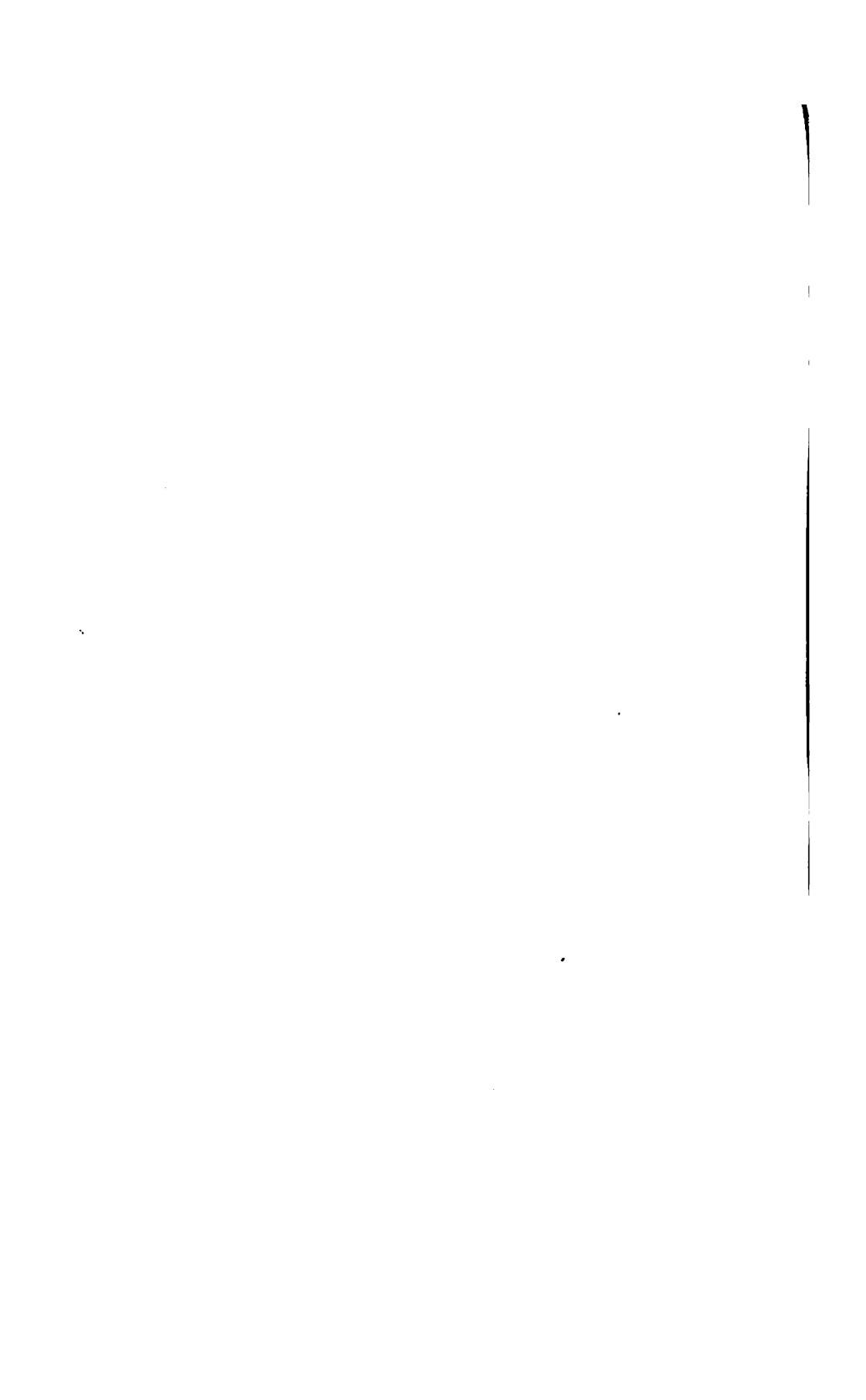
	Per Thousand Inhabitants Yearly.		
	1820.	1850.	1890-94.
Births	31.7	26.9	22.5
Deaths	25.4	21.4	22.6
Natural increase	6.3	5.5	0

The birth-rate is the lowest in Europe; the death-rate is relatively 15 per cent. higher than in the United Kingdom, and consequently the span of life is 18 months shorter than ours. The occupations of the people in 1891 were as follows:—

	Principals.	Assistants.	Total.
Agriculture . .	3,570,000	3,650,000	7,220,000
Manufactures . .	1,020,000	8,700,000	4,720,000
Commerce . .	940,000	1,510,000	2,450,000
Professions, &c. .	2,140,000	760,000	2,900,000
Total . .	7,670,000	9,620,000	17,290,000

The number of workers is 470,000 more than in the United Kingdom, although the population is a trifle less; the difference is readily explained by the fact that in France 61 per cent. of the population are of working age, between 15 and 60 years, against 58 per cent. in the United Kingdom. The following table shows at various dates the working-power of France:—





Year.	Millions of Foot-tons Daily.			Foot-tons per Inhabitant.
	Hand.	Horse.	Steam.	
1840	3,060	8,050	350	11,460
1860	3,350	9,700	4,800	17,850
1893	3,600	9,300	19,660	32,460

The increase of power has been mainly due to the more general use of steam, which is shown approximately as follows :—

Year.	Steam, Horse-power.			
	Fixed.	Railway.	Steamboats.	Total.
1840	34,000	42,000	11,000	87,000
1860	181,000	930,000	84,000	1,195,000
1895	826,000	3,600,000	490,000	4,915,000

The steam-power of France is less than half that of the United Kingdom.

AGRICULTURE

France is the largest wheat grower in Europe except Russia, the area having increased 40 per cent. since the close of Bonaparte's wars, viz. :—

Year.	Acres.	Crop, Tons.	Value, £.	Bushels per Acre.
1818	12,800,000	8,650,000	49,100,000	11·1
1894	17,500,000	8,500,000	72,700,000	19·4

Formerly there was in ordinary years a surplus for exportation; down to the year 1840 not more than 60 per cent. of the French people consumed wheaten bread, the rest subsisting on rye; but at present, wheat being the food of the whole population, the crop is insufficient, as the importation averages 1,500,000 tons yearly—that is, about two months' supply. The area under all kinds of grain is about the same as it was forty years ago, but the crops are heavier; that of 1894 compares with that of 1850 thus :—

Year.	Acres.	Crop, Tons.		
			1850	1894
			36,200,000	36,600,000
			12,800,000	20,100,000

The average yield per acre for the whole grain area is now 50 per cent. more than it was forty years ago, thanks to the improved method of agriculture. It was a common thing in the reign of Louis-Philippe to see horses treading out grain, as customary in England 500 years ago, but Cobden's treaty in 1860 led to such an introduction of machinery that in 1872 no fewer than 2850 steam threshers were at work in France. Not only is the yield per acre greater, but there is also a considerable saving in the quantity of seed : thus, before 1830 it took 18 lbs. of seed to produce 100 lbs. of wheat, whereas now 13 lbs. suffice, equal to a saving of 27 per cent. If we suppose the same as regards oats, barley, &c., it implies a total saving of 750,000 tons of grain yearly, worth £5,000,000 sterling. Official returns of the cultivated and the uncultivated areas in 1894 compare with those for 1840 thus :—

	Acrea.		
	1840.	1894.	
Grain . . .	34,500,000	36,600,000	
Vines . . .	5,200,000	4,200,000	
Other crops . . .	17,800,000	26,200,000	
<hr/>			
Cultivated . . .	57,500,000	67,000,000	
Forest . . .	16,200,000	20,700,000	
Pasture . . .	10,500,000	23,100,000	
Waste . . .	47,000,000	19,500,000	
<hr/>			
Total . . .	131,200,000	180,800,000	

About 27 million acres of waste lands have been reclaimed since 1840, of which nearly 13 millions have gone into pasture, $9\frac{1}{2}$ into tillage, and $4\frac{1}{2}$ millions into forest timber. The extent of France is a trifle less than it was fifty years ago, the loss of Alsace-Lorraine in 1871 having exceeded the gain of territory by annexing Nice and Savoy in 1859. As to agricultural area France lost 3 million acres by the cession of Alsace-Lorraine, but this was a minor calamity compared with the Phylloxera, an insect that made its first appearance in 1865 and after ten years of inactivity spread like a destroying pestilence in 1876 over the west and south. More than

4,000,000 acres of vineyard, representing a value of 200 millions sterling, were wholly or partially ruined, only one-third of the area under vines escaping this terrible visitation, the effect of which is shown in the following table:—

Year.	Acres.	Wine, Million Gallons.	Gallons per Acre.
1873 . .	6,060,000	1,720	283
1894 . .	4,220,000	870	206

No less than 1,800,000 acres of vineyard have disappeared, and are now planted with potatoes or beet-root. Owing, however, to the diligence of the wine-growers the plague has been stamped out, and the ordinary yield, as before, passes 200 gallons of wine per acre. Nevertheless the vintage is far short of the requirement for home consumption, and France now imports about 50 per cent. more wine than she exports. The following table shows the quantities of wine and grain imported and exported in thirty years, down to the end of 1892:—

Period.	Wine, Million Gallons.		Grain, Million Bushels.	
	Import.	Export.	Import.	Export.
1863-72 . .	48	630	233	167
1873-82 . .	663	682	660	180
1883-92 . .	2,280	506	480	74
30 years . .	2,991	1,818	1,373	421

From the above it appears that during the decade ending with 1892, the net imports of grain averaged yearly a little over 40 million bushels, and of wine 180 million gallons. Nor is it only in wine and grain that France has a deficit every year; the supply of meat is likewise short, the net importation averaging 50,000 tons. This is the more remarkable as the weight of carcase, whether beef or mutton, has notably increased with the cultivation of beet-root. An official report in 1885 showed, as compared with 1847, that the average sheep carcase rose from 50 lbs. to 80 lbs., and oxen from 700 lbs. to 1030 lbs. The consumption of meat has doubled since Dupin's estimate in 1840, viz.:—

Year.	Tons of Meat.			Total.
	Beef.	Mutton.	Pork.	
1840 . . .	299,000	82,000	290,000	671,000
1893 . . .	700,000	210,000	290,000	1,200,000

The above total for 1893 does not include 50,000 tons of imported meat, which brings it up to 1,250,000 tons, equal to 70 lbs. per inhabitant against 43 lbs. in 1840. The value of all farm products has been estimated at various periods from 1816 to 1890 by Chaptal, Roger, Dupin, and Tisserand, showing a rapid rise till 1882, since which date there has been a decline, as shown thus:—

	Millions £ Sterling.				
	1816.	1848.	1882.	1890.	1894.
Agricultural . . .	142	212	310	271	284
Pastoral . . .	45	101	182	167	132
Total . . .	187	313	492	438	416

The value of farming products in 1894 compares with Chaptal's estimates in 1816 and Tisserand's in 1890, as follows:—

	Millions £ Sterling.		
	1816.	1890.	1894. ¹
Grain	74	120	130
Wine	29	45	47
Other crops	39	106	107
Meat	18	65	56
Dairy products	7	46	46
Sundries	20	56	30
Total	187	438	416

The productive area of France compared with that of the United Kingdom, and the value of products, are shown thus:—

	Millions of Acres.			Product, Millions £.	Shillings per Acre.
	Tillage.	Pasture.	Total.		
France . . .	67	23	90	416	92
U. Kingdom . . .	20	28	48	230	96

¹ In the estimates for 1894 the item of Grain includes Straw, but not in previous years.

It appears that the gross product per acre is almost equal in the two countries, but not the product compared with the number of agricultural hands, viz. :—

	Hands.	Millions £.	£ per Hand.
France	7,220,000	416	58
United Kingdom . .	2,527,000	230	91

In a strictly economic sense, that is if we keep in view to produce a maximum of value with a minimum expenditure of energy, the English system of farming leaves the French much behind. But if agriculture be considered as an occupation in which to maintain in comfort a very large section of the population, the French method is preferable. Instead of 19,000 land-owners in France, the number exceeds $3\frac{1}{2}$ millions, and if we exclude all estates under 12 acres, as cottier holdings, we find the land tenure of the two countries as follows :—

	No. of Estates.	Acres.	Average, Acres.
France	1,638,000	91,250,000	56
United Kingdom . .	19,275	57,890,000	3,003

The total of persons interested in agricultural pursuits in the two countries may be set forth, side by side, thus :—

	Number.		Ratio.	
	U. Kingdom.	France.	U. Kingdom.	France.
Estate-owners . .	19,275	1,638,000	8	227
Farmers . .	1,048,000	1,932,000	416	268
Assistants . .	1,459,725	3,650,000	576	505
Total . .	2,527,000	7,220,000	1,000	1,000

In the above comparative table the item of farmers as regards France includes a number of cottiers holding properties of less than 12 acres. It is here to be borne in mind that the official inquiry of 1882 shows that only 60 per cent. of the cultivated area is farmed by the owners. The agricultural wealth of France has been estimated by Chaptal, Dutens, and subsequent writers, and appears to have doubled since 1817, showing as follows :—

Year.	Land.	Cattle.	Sundries.	Total.
1817	1,198	63	126	1,387
1852	2,106	166	227	2,499
1893	2,580	232	281	3,098

The inquiry of 1882 shows that there are 3,503,000 farms; it appears, therefore, that on an average each farm represents £880 of capital, and a gross annual product of £119, that is 13½ per cent. on capital, as compared with 11 per cent. in the United Kingdom.

As regards food supply, if we reduce the principal products to a grain denominator, the account stands thus for 1894:—

	Quantity.	Equiv. Tons of Grain.
Grain, tons	20,100,000	20,100,000
Potatoes, "	12,800,000	4,300,000
Meat, "	1,200,000	9,600,000
Wine, gallons	880,000,000	8,800,000
Total		42,800,000

This is equivalent to more than a ton of grain per inhabitant, and yet the production is short of the needs of the population; so that France has to import every year grain, wine, and meat.

FORESTS AND FISHERIES

So much attention is paid to forestry that the area under timber has increased by 4,500,000 acres since 1840. According to Tisserand the product is worth £14,000,000 yearly, or 13 shillings an acre. The weight of timber produced yearly is about 25 million tons, but this is inadequate for the requirements of the nation, no less than 3 million tons of foreign timber being also consumed. The value of timber and firewood consumed yearly averages 9 shillings per inhabitant, against 4 shillings in the United Kingdom.

The fisheries employ 85,000 men, who take yearly 150,000 tons of fish, value £4,800,000, equal to £56 per fisherman, against £63 in the fisheries of the United Kingdom. French fish averages £32 per ton, British only £11.

MANUFACTURES

Down to the eighteenth century France obtained her woollens from Spain, her linens from Holland, and her silks from Italy. Manufacturing industries had a great development in the reign of Louis XV., and when Tolosan made his survey in 1788 he valued the output of textile goods at 18 millions sterling. The next estimate was by Chaptal in 1812, who valued textiles at 32 millions sterling, an increase of 80 per cent. from Tolosan's time. Subsequent reports and estimates are shown in the following table :—

	Millions £ Sterling.			
	1812	1835.	1860.	1894.
Woollens . . .	10	16	28	45
Silks . . .	4	10	20	28
Cottons . . .	8	12	14	22
Linens, &c. . .	10	12	12	20
Total . . .	32	50	74	115

Woollens.—This industry has always held the foremost rank among textiles. The mills consume 207,000 tons of wool, and turn out goods to the value of £45,000,000, of which one-fifth is exported. The consumption of wool has multiplied six-fold since Chaptal's estimate, viz. :—

Year.	Tons of Wool Consumed.		
	French.	Imported.	Total.
1812 . . .	27,000	7,000	34,000
1867 . . .	47,000	64,000	111,000
1894 . . .	37,000	170,000	207,000

The first machinery for spinning wool was put up at Rheims in 1809, and that city now possesses 330 woollen mills. Chaptal found the chief seats of this industry in 1812 to be Sedan and Louviers, which had 5500 looms and gave employment to 28,000 workmen. In 1890 France counted 1926 mills, with 46,000 power-looms, and 3,300,000 spindles, for the most part situate at Lille, Sedan, Roubaix, Rheims, and

Amiens. Thirty years ago nearly half the wool used was French, but now the River Plate supplies three-fourths. The wool of the Pampas, meantime, is so heavily impregnated with dust and grease that it should be counted only as 75 per cent. of what ordinary unwashed wool would be. Therefore, it may be said, that the French mills consume no more than 170,000 tons of wool yearly, or three-fourths of our consumption in the United Kingdom. Home consumption in France of woollen goods reaches 36 millions sterling, equal to 19 shillings per inhabitant, against 23 shillings in the United Kingdom.

Silks.—In 1801 the weaver Jacquard invented at Lyons the loom that bears his name, and to this fact is in some measure due the prosperous position of Lyons as the foremost centre of silk industry in the world. From the fifteenth to the eighteenth century Tours had held pre-eminence, but when Chaptal made his survey in 1812 Lyons had 11,000 looms and 15,000 operatives, while Tours counted only 320 looms. The latest official returns show that in 1890 France had 1170 silk factories, with 107,000 looms and 1,100,000 spindles, Lyons possessing 44,000 looms, and turning out silk goods to the value of £16,000,000 yearly. The annual consumption of raw silk and the value of output are shown thus:—

Period	Tons of Silk Consumed Yearly.			Output, &c.
	French.	Imported.	Total.	
1830-32 . . .	720	510	1,230	7,500,000
1868-73 . . .	540	6,840	7,380	34,600,000
1894 . . .	800	7,600	8,400	28,200,000

In 1894 the value of silk goods produced at Lyons was £15,970,000, and at St. Etienne £3,750,000, together nearly three-fourths of the total silk industry of France. One-third of the manufactures is exported, and on the other hand France imports silk goods to the value of £1,700,000 yearly; the home consumption reaches £20,000,000, say 10 shillings per inhabitant, the same as in the United Kingdom. This is very different from the condition of things sixty years ago,

when Porter estimated the consumption of silk manufactures at 7 shillings per head in England and 1 shilling in France.

Cottons.—Rouen, which is now styled the Manchester of France, began to make cotton handkerchiefs in 1789, the output that year being £600,000. Chaptal's report on cotton factories in 1812 showed 70,000 looms and 1,030,000 spindles, which spun 11,000 tons of yarn, the value of goods made being £7,600,000. The industry, as Porter observes, would have advanced more rapidly but for the dearness of fuel, iron, and machinery, which France could with difficulty obtain from England or elsewhere, owing to the enormous import dues. The consumption of raw cotton at present reaches 165,000 tons, this branch of manufacture having sustained a serious check by the Franco-German war which deprived France of 1,500,000 spindles in Alsace. Nevertheless there has been such a recovery in late years that the weight of cotton consumed has risen 25 per cent. since 1884. The present output represents a value of 22 millions sterling, and the home consumption 20 millions; the latter gives an average of 10 shillings per inhabitant, against 20 shillings in the United Kingdom. According to Zehden the French cotton mills have 112,000 power-looms, that is one-fifth of the number in British cotton mills.

Linens.—Tolosan estimated the output of this manufacture in 1788 at 5 millions sterling. The factories of St. Quentin, Lille, &c., in 1812 counted 139,000 operatives, who produced linen and canvas goods valued at £9,700,000. An official statement for 1875 showed 1 million spindles, which consumed 70,000 tons of flax, and turned out fabrics to the value of £12,000,000. Finally in 1894 there were 360 factories which consumed flax, hemp, and jute as follows:—

	Tons.	Output, Value, £.
Flax	85,000	10,500,000
Hemp	48,000	3,600,000
Jute	54,000	2,100,000
Total	187,000	16,200,000

Nearly all goods of this description were kept for home consumption.

Raw Material.—Levasseur's table of the importation of fibre shows as follows:—

	Tons of Fibre Imported.			
	1820.	1845.	1867.	1887.
Wool . . .	7,000	19,000	65,000	179,000
Cotton . . .	21,000	57,000	101,000	141,000
Flax, &c. . .	9,000	17,000	66,000	133,000
Silk . . .	540	1,170	6,460	11,530
Total . . .	37,540	94,170	238,460	464,530

The above is, of course, irrespective of the wool, flax, and silk grown in France. Besides the foregoing industries there is that of lace at Valenciennes and other places, giving employment to 350,000 women, who are supposed to earn in this way about £12 a year each, say 4 millions sterling.

Hardware.—All manufactures of this description were retarded during half a century by the severe laws against foreign iron and coal, until Cobden's free-trade treaty with Napoleon III., in 1860, gave an immense impulse to every kind of industry. The consumption of coal and metals is stated by Levasseur and others as follows:—

	Consumption, Tons.		
	1820.	1867.	1894.
Coal	2,400,000	19,600,000	37,500,000
Iron	260,000	1,380,000	2,120,000
Lead	13,000	42,000	70,000
Copper	6,000	25,000	40,000
Total	2,679,000	21,047,000	39,730,000

In the reigns of Charles X. and Louis-Philippe iron was so dear that the peasants used wooden ploughs:¹ the consumption of iron yearly per inhabitant hardly reached 40 lbs.,

¹ Rochefoucauld computed that agriculturists used 2 lbs. of iron yearly per acre, or 57,000 tons for the whole of France.

whereas it is now 135 lbs. In 1894 there were more than 600 blast furnaces, employing 120,000 workmen. The value of hardware manufactures has been approximately as follows :—

	1880, £.	1887, £.	1894, £.
Iron . . .	6,500,000	20,700,000	38,700,000
Copper . . .	1,200,000	5,100,000	6,000,000
Lead . . .	700,000	2,600,000	2,600,000
Zinc, &c. . .	200,000	1,000,000	1,400,000
Total . . .	8,600,000	29,400,000	46,700,000

The hardware industries sum up about 47 millions sterling, or one-third of the value of the same class of manufactures in Great Britain.

Leather.—The production of leather has risen 60 per cent. since the year 1818, but is still much less than in the United Kingdom ; one-third is made from imported hides, viz. :—

Year.	Tons of Leather Consumed.			Output, Millions £.
	French.	Imported.	Total.	
1818 . . .	35,000	15,000	50,000	25
1860 . . .	57,000	18,000	75,000	38
1894 . . .	62,000	28,000	90,000	45

Exports of leather and leather goods reach a value of 8 millions sterling, leaving for home consumption 37 millions, equal to 19 shillings per inhabitant, against 28 shillings in the United Kingdom. The use of wooden shoes in France explains the difference.

Glass and Porcelain.—According to Chaptal nearly all the glass in use down to the Revolution was imported, but the industry grew so rapidly under Bonaparte that in 1812 there were 85 factories producing goods to the annual value of £800,000. The porcelain factory founded at Sèvres in 1756 has enjoyed world-wide fame for more than a century. Chaptal estimated the output of all kinds of pottery at £1,300,000. At present the combined value of glass and pottery is apparently on a par with the output in the United

Kingdom, say 15 millions sterling per annum : the exports of these articles from the two countries are equal.

Paper and Printing.—In 1812 the consumption of paper was 15,000 tons, and the value of books and journals £1,600,000. The progress of journalism was slow in the first half of the century, the total daily issue of papers in Paris in 1840 not exceeding 90,000 copies. At present the circulation of Paris is over 3 million papers daily, and that of all France is about 5 millions. There are more than 7000 new books published yearly at Paris, and the total output of the press may be valued at £16,000,000. France has 530 paper-mills, which turn out more than 200,000 tons yearly.

Houses and Furniture.—The capital value of houses and furniture being 2,940 millions sterling, the annual production, at 3 per cent. on that amount, will be 88 millions.

Clothing.—The value of this industry was stated in 1875 to be £52,000,000 ; at present it appears to be approximately £69,000,000, the production in Paris according to Professor Zehden reaching one-fourth of the latter sum. Exports of apparel reach £4,000,000, leaving for home consumption £65,000,000, say 34 shillings per inhabitant, against 43 shillings in the United Kingdom ; hats and shirts included, but not boots.

Food.—Wine and cider, having been classed among agricultural products, must be excluded from the list of manufactures ; not so spirits and beer, the product of which exceeds 18 millions sterling. The manufacture of oil amounts in value to 12 millions sterling, and has grown eight-fold in twenty years, the importation of oleaginous seeds having risen from 90,000 tons in 1873 to 770,000 in 1894. Sugar has more than doubled in the same interval, the output exceeding 400,000 tons, value 6 millions sterling. Kolb's official report showed that France had 53,000 factories for the production of food, to the yearly value of 112 millions sterling.

Summary.—Professor Zehden's estimate of the total value of French manufactures in 1886 was 600 millions sterling,

although an official statement in 1892 gives it no higher than 512 millions. These figures compare with earlier estimates by Chaptal, Levasseur, and others as follows:—

1812 . . £ 78,000,000		1860 . . £400,000,000
1850 . . 340,000,000		1886 . . 600,000,000

Chaptal's estimate for 1812 was too low, and apparently included only the output of factories, taking no note of the small industries of artisans. Levasseur's for 1860 and Zehden's for 1886 were evidently close to the truth. There has been little increase of value since 1886, and the sum total of French manufactures at various dates seems to have been approximately as follows:—

	Millions £ Sterling.		
	1812.	1860.	1894.
Textiles	32	74	115
Hardware	8	26	47
Leather	22	41	45
Food	60	100	113
Clothing	35	55	69
Houses and furniture	20	48	88
Sundries	44	86	119
Total	221	430	596

If we compare the manufacturing and mining product with the number of hands in France and in the United Kingdom, we find as follows:—

	Manufactures. Millions £ Sterling.			Hands.	£ per Hand.
	Manufactures.	Mining.	Total		
France	596	16	612	4,720,000	130
U. Kingdom	876	78	954	9,026,000	106

The ratio per hand is higher in France because many of the industries, such as silk, are of a more valuable character than the principal British ones.

MINERALS

Coal holds the first place, the extraction at present reaching 25 million tons, or fifteen times the quantity that was raised in the year 1830. Production and consumption are shown in the following table :—

	Tons of Coal, Yearly Average.			
	1811-20.	1841-50.	1871-80.	1891-94.
Raised . . .	890,000	4,100,000	17,200,000	26,300,000
Imported . . .	180,000	2,050,000	7,700,000	10,400,000
Consumption . . .	1,070,000	6,150,000	24,900,000	36,700,000

According to an official statement in 1879, the net profit, after paying wages and all working expenses, averaged 21 pence per ton, but in 1888 profits were less, and 129 collieries were worked at a loss. The Pas-de-Calais mines yield half the total, the St. Etienne field being next in production. The output in 1888 averaged 225 tons per miner against 130 in 1835. The average in Great Britain is 280 tons, so that four British colliers raise as much as five French.

Iron is found in 58 departments, but the production has never been sufficient for the wants of the country. The prohibitory dues against foreign coal retarded the iron industry for more than fifty years, fuel being so dear that the cost of producing a ton of iron, under Charles X. and Louis-Philippe, was three times as much as in England. Production and consumption were as follows :—

	Tons of Iron.			
	1814.	1850.	1870.	1894.
Made . . .	100,000	570,000	1,180,000	2,100,000
Imported . . .	...	30,000	170,000	200,000
Consumed . . .	100,000	600,000	1,350,000	2,300,000

As regards copper France depends chiefly on what is imported : the consumption averages 40,000 tons yearly, only one-tenth being from native ore. The consumption of lead is about 70,000 tons, two-thirds imported. The total value of coal and other minerals, along with the product of quarries, is 16 millions sterling, the number of hands being 180,000.

COMMERCE

Official returns of the foreign trade of France at various dates show as follows :—

	Millions £ Sterling.			
	1802.	1850.	1878.	1894.
Imports	12	31	142	154
Exports	12	43	151	123
Total	24	74	293	277

Trade received an extraordinary impulse from the Cobden Treaty of 1860, the amount of imports and exports in 1869 showing a rise of 50 per cent. in the interval. A reaction set in under Thiers, who introduced a Protective tariff, by this means hampering the commercial energies of the nation. The results of Free Trade and Protection are seen in comparing the growth of trade in twenty-five years in France and the United Kingdom as follows, in millions £ sterling :—

	1869.	1894.	Increase per Cent.
France	249	277	11
United Kingdom	532	703	32

The increase in value of British trade was relatively three times as great as that of French. Thiers declared his purpose to be to augment French exports, which, however, have remained stationary in point of value, the amount in 1894 having been the same as in 1869. British exports in the same interval rose from 190 to 216 millions, an increase of 14 per cent. The commercial relations with foreign countries are shown in the following average table for five years ending December 1892 :—

	Millions £ Sterling.			
	Imports from.	Exports to.	Total.	Ratio.
Great Britain	23	39	62	19·6
Belgium	18	21	39	12·3
Germany	14	14	28	8·7
United States	15	11	26	8·2
Spain	14	7	21	6·6
Various	90	50	140	44·6
Total	174	142	316	100·0

Shipping.—The protective system of Thiers created heavy bounties in favour of French merchant shipping ; these bounties cost the nation £4,000,000 yearly, and seem to be of no effect, since tonnage and carrying-power have declined in the last eleven years, as shown in the following table :—

Year.	Tons register.			Tons, Carrying Power.
	Steam.	Sail.	Total.	
1840 . . .	10,000	624,000	634,000	664,000
1872 . . .	180,000	910,000	1,090,000	1,630,000
1884 . . .	511,000	523,000	1,034,000	2,567,000
1895 . . .	492,000	399,000	891,000	2,360,000

In 1872 France was 18 per cent. ahead of Germany in carrying-power ; in 1895 Germany was 70 per cent. ahead of France, both in registered tonnage and carrying-power.

Internal Trade.—The internal trade at various dates was approximately as follows :—

	Millions £ Sterling.			
	1816.	1848.	1860.	1894.
Agricultural products . . .	187	313	380	416
Manufactures . . .	221	324	430	596
Forestry, minerals, &c. . .	6	10	18	35
Imports	15	30	76	154
Total	429	677	904	1,201

Internal trade has trebled in France and quadrupled in Great Britain since the close of the Bonaparte wars, eighty years ago. Foreign trade has, of course, increased in much higher ratio in both countries.

Railways.—The first line was opened at St. Etienne in 1828, but the construction of railways was slow until the accession of Louis Napoleon, in 1853 : in that year France had 2450 miles in traffic, and at the fall of the Second Empire, in 1870, there were 11,000 miles. The amount of capital expended in making railways during Louis Napoleon's reign was 363 millions sterling, an average of 21 millions yearly. At present France has open 24,970 miles, representing a cost of 663 millions sterling, say £26,500 per mile, against £55,400 per mile in England. Of the earlier French

lines it was found that land stood for 8 per cent. of the total cost, earthworks 36 per cent., the rest going for rails, rolling-stock, stations, &c. Since the fall of the Second Empire a number of lines of minor importance have been constructed at the instigation of M. Freycinet, but so far these lines produce no net earnings. Some of the older lines are indebted to the State, on the score of guarantee deficits; the Great Southern, £5,900,000; the Orleans line, £5,800,000. These lines will revert to the State in the year 1960. The system of guarantees is a serious drain to the treasury, the deficit paid in 1893 amounting to £4,600,000. Nearly all the railways have been made by companies, except the State lines commenced on Freycinet's plans in 1878, the existing length of which is 1640 miles: these represent a cost of about 30 millions sterling. Goods traffic on all the French railways amounted in 1893 to 1226 millions of kilometric tons, being 70 per cent. of the total traffic by rail, water, and high-road in France. The goods traffic on French lines is one-fifth less than that of the railways of the United Kingdom. The gross and net earnings on French lines are much greater now per mile than they were fifty years ago, viz.:—

	Per Mile.		
	1843, £.	1893, £.	Increase, £.
Receipts	1,810	2,195	385
Expenses	970	1,253	283
Net profit	840	942	102

Working expenses take 57 per cent. of gross earnings, against 56 per cent. in the United Kingdom: the net profit on capital is $3\frac{1}{2}$ per cent., against $3\frac{1}{2}$ in England.

Banks.—Banking-power in 1881, according to the *Journal des Economistes*, reached 268 millions sterling: since then the circulation of the Bank of France has risen 33 per cent., from which it may be inferred that the banking-power of the republic is now about 356 millions sterling. The capital of the Bank of France when founded, in 1803, was £3,600,000, which was doubled in 1857: it has right of emission up to

140 millions sterling, and the official returns at various dates show :—

Year.	Millions £ Sterling.		
	Issue.	Bullion.	Discounts.
1820	6	8	12
1860	80	21	199
1882	133	119	337

In June 1894 the bank held £71,500,000 in gold, and £51,200,000 in silver, the issue amounting to 136 millions sterling. There are forty-six other joint-stock banks, with a paid capital of 59 millions sterling, the aggregate dividends in 1889 amounting to 8 per cent. France possesses three times as much bullion as the United Kingdom, but her banking-power is only one-third of ours. The money used by the two countries compares thus :—

	Millions £ Sterling.					£ per Inhab.
	Gold.	Silver.	Paper.	Total.		
France	187	140	140	467	12·0	
United Kingdom	85	24	41	150	3·7	

In France they use £39 of money for £100 of internal trade, whereas in the United Kingdom we use only £9, 7s.

EARNINGS AND WEALTH

The earnings of the people were estimated at various dates by French economists as follows :—

Year.	Millions £.	£ per Inhab.
1810	251	9·1
1850	660	18·8
1890	900	24·0

All the above estimates, even the latest by Lacoste, were apparently too low. The following table shows the amounts approximately at four periods :—

	Millions £ Sterling.			
	1816.	1843.	1860.	1894.
Agricultural . . .	113	188	228	250
Manufacturing . . .	110	160	215	298
Mining, forests, &c. . .	6	10	18	35
Trade . . .	43	68	90	120
Transport . . .	45	71	94	126
House-rent . . .	26	36	60	118
Domestics . . .	18	24	40	79
Public service . . .	19	24	37	64
Professions . . .	88	58	78	109
Total . . .	418	639	860	1,199

It is remarkable that the earnings of the British and French nations approached at two of the above periods, but the ratio per head has always been much higher in the United Kingdom, viz. :—

Year.	Millions £.		£ per Inhabitant.	
	France.	U. Kingdom.	France.	U. Kingdom.
1816 . . .	418	404	15	21
1860 . . .	860	938	24	32
1894 . . .	1,199	1,423	81	86

Among the countries of the European Continent there is none that shows so high a ratio of earnings per inhabitant as France.

Wealth.—The wealth of the nation has been estimated by French writers at various dates as follows:—

Year.	Millions £.		£ per Inhab.	
	France.	U. Kingdom.	France.	U. Kingdom.
1830		2,840		90
1869		6,680		176
1892		9,200		242

Official returns show that property in France changes hands every thirty-six years, and on this basis, according to the Stamp Office Report of 1892, the amount of real and personal property was at various periods as follows, in millions £ sterling:—

Period.	Real.	Personal.	Total.	£ per Inhab.
1847-51 . . .	2,138	1,548	3,686	105
1867-71 . . .	3,520	3,248	6,768	180
1887-91 . . .	4,558	4,745	9,303	245

The most rapid increase of wealth occurred during the Second Empire, partly owing to the expansion of commerce after Cobden's Anglo-French treaty, partly to the development of railways and steam-power. The following table shows the increase :—

Period.	Millions £.	£ Yearly.	£ per Head.
1831-51 . . .	1,022	51,100,000	1·5
1851-71 . . .	8,082	154,100,000	4·2
1871-91 . . .	2,535	126,700,000	3·4
60 years . . .	6,639	110,600,000	3·1

Notwithstanding the industrious and thrifty character of the French, the accumulation of wealth per head since 1860 has been much less than in Great Britain; but it must be borne in mind that the Franco-German War cost France 650 millions sterling, between the army expenses, the indemnity paid to Germany, and the loss of Alsace-Lorraine. But for this the average accumulation during the whole period of forty years since 1851 would have been 85 shillings yearly per inhabitant, against 78 in the United Kingdom. The principal components of wealth at various dates were approximately as follows :—

	Millions £ Sterling.		
	1815.	1866.	1894.
Land . . .	1,198	2,520	2,580
Cattle, &c. . .	189	470	513
Houses . . .	460	1,080	1,960
Furniture . . .	225	540	980
Factories . . .	75	160	199
Railways . . .	0	220	663
Merchandise . . .	216	493	601
Bullion . . .	100	250	327
Sundries . . .	217	587	1,867
Total . . .	2,670	6,320	9,690

Land.—This item seventy years ago constituted half the wealth of France: at present it is little more than one-fourth. According to De Foville the average price rose steadily from £13 per acre in 1821 to £32 in 1874, and subsequently fell to £27 in 1886. The official returns already quoted show

that the total value of real estate in the period of 1887-91 was 4558 millions sterling, from which deducting that of houses and factories the balance corresponding to land was 2580 millions sterling. This gives an average as follows:—

	Acre.	Millions £.	£ per Acre.
Under crops . . .	66,900,000	2,210	33·0
Pasture, &c. . .	43,800,000	370	8·4
Total . . .	110,700,000	2,580	23·4

Agricultural capital in France, between land, cattle, and implements, sums up 3093 millions sterling, equal to £80 per inhabitant, against £54 in the United Kingdom.

Houses.—In 1815 Chaptal estimated the value of houses and factories in France at £462,000,000, which was equivalent to £76 per house, or £16 per inhabitant. In eighty years the value has more than quadrupled, being at present about 2160 millions sterling, an average of £210 per house, or £52 per inhabitant. Excluding factories, the value in 1890 was as follows:—

Class.	No.	Millions £.	£ per House.
Castles	44,600	77	1,730
Mansions	310,400	691	2,230
Ordinary houses	1,260,000	425	340
Cottages	7,301,000	653	90
Total	8,916,000	1,846	207

The assessed rental in 1890 was £113,300,000, and the official valuation 1973 millions sterling, inclusive of factories. According to the official statement of 1890 Paris stands for nearly 30 per cent. of the house-property of France, as shown in the following table:—

	Millions £.	Population.	£ per Head.
Paris	534	2,450,000	218
Towns	906	17,900,000	51
Rural	406	17,750,000	23
Total	1,846	38,100,000	48

The growth of Paris has been exceedingly rapid; the highest

price for building-sites in 1826, says Guyot, was £2 per square foot, and at present £10 is not an uncommon price. The rental assessment of Paris in 1882 was exactly three times that of 1851, and this was partly the result of the Haussmann improvements, all the principal streets having been rebuilt between 1853 and 1869, at an outlay of 85 millions sterling. The assessed rental is now higher per inhabitant than in London. The statement of 1890 showed that in the interval since 1870 no fewer than 3,010,000 new houses were built, and 2,180,000 old ones pulled down, the result being an increment of value amounting to 466 millions sterling, or 23 millions yearly.

Factories.—In 1889 there were 131,000, valued at 127 millions sterling, but this appears to have been exclusive of machinery; at the ordinary valuation, say one-third of yearly output, the factories and machinery would represent 192 millions sterling.

Sundries.—This item includes, among other things, the amount of French capital in foreign or colonial investments, which was estimated by Neymarck in 1891 at 800 millions sterling, made up thus:—Russian, 220; Spanish, 110; Austrian, 90; various, 380 millions.

Distribution of Wealth.—If we may take house valuation as a guide, the distribution of earnings and wealth is as follows:—

Class.	Families.	Millions £.		£ per Family.	
		Earnings.	Wealth.	Earnings.	Wealth.
Rich .	855,000	440	8,440	1,240	9,700
Middle .	1,260,000	240	1,920	190	1,600
Working .	7,301,000	519	4,330	71	594
Total .	8,916,000	1,199	9,690	184	1,088

Leroy Beaulieu estimates that there are in Paris 36,000 persons with incomes exceeding £500 a year, 180,000 ranging between £100 and £500, and the rest under £100 a year. He adds that France has eight times the income of Paris. There is no material difference between his estimate and the one given above.

FINANCE

The revenue and expenditure from the fall of Buonaparte have been as follows :—

Régime.	Date.	Millions & Sterling.		
		Revenue.	Expenditure.	Deficit.
Bourbons . . .	1815-30	87	41	4
Louis-Philippe . .	1831-48	48	51	3
Republic . . .	1848-52	55	70	15
Louis Napoleon . .	1853-70	74	84	10
Republic . . .	1871-93	131	148	17

In the expenditure of 1871-93 is not included the cost of the Franco-German war, 400 millions sterling, as it cannot be fairly charged to the account of the Republic. The budget for 1895 was :—

Revenue.	Expenditure.
Excise . . . £48,700,000	Debt . . . £49,400,000
Customs . . . 18,600,000	Army and Navy . . . 37,100,000
Stamps . . . 27,800,000	Public Works . . . 9,300,000
Post-office . . . 8,500,000	Schools . . . 7,700,000
Taxes, &c. . . 24,700,000	Sundries . . . 29,100,000
Total . . . £128,300,000	Total . . . £132,600,000

So lavish has been the expenditure on public works since the fall of the Second Empire, that to this cause may be partly attributed the fact that the debt of France has risen 391 millions sterling, or 17 millions a year since 1870. The government has spent 30 millions in the construction of new railways, and 30 millions on harbours, besides constructing 52,000 miles of telegraph, putting up lighthouses, and making roads and bridges, the total of such expenditure falling little short of 200 millions sterling. The amount of revenue raised by taxation in 1894 was 102 millions sterling, equal to 53 shillings per inhabitant, against 41 shillings in the United Kingdom. If local taxes be added the total paid yearly by the French people will reach 144 millions sterling, or 12 per

cent. of their earnings, against 8½ per cent. in the United Kingdom.

Debt.—The debt of France compared with wealth at various dates as follows:—

Year.	Millions £ Sterling.		
	Wealth.	Debt.	Debt Ratio.
1817	2,670	90	8·4
1866	6,320	504	8·0
1895	9,690	1,220	12·5

If France were not so rich a country the rapid growth of debt would give reasonable ground for alarm, but the ratio of debt to wealth is, after all, much less than it was in the United Kingdom in 1850. The interest of debt imposes a burthen of 26 shillings a year per inhabitant, yet, in spite of this, as we have seen, there is an annual accumulation of wealth of 68 shillings per head. If we take also local debts, say 180 millions, the grand total will then be 1400 millions sterling; but from this should be deducted the sum of 30 millions spent on state railways, which reduces the total debt to 1370 millions sterling—that is, 14 per cent. of national wealth, as compared with 7 per cent. in the United Kingdom.

V

GERMANY

ALTHOUGH a part of Austria was included in the German Confederation until 1866, it will be more convenient for the study of Germany, its people and industries, to eliminate the Austrian element altogether. The population of Germany has more than doubled since the Waterloo epoch, 1815, viz.:—

	1815.	1866.	1895.
Prussia . . .	10,170,000	18,040,000	31,490,000
Bavaria . . .	3,560,000	4,810,000	5,770,000
Other States . . .	7,250,000	10,310,000	14,500,000
Total . . .	20,980,000	33,160,000	51,760,000

In the above table Prussia includes Hanover, Nassau, and Hesse-Cassel, although they were not annexed until 1866. Among the minor states in 1895 are included Alsace and Lorraine, annexed in 1871; if their population were deducted it would still be found that Germany had an increase of 29 million souls, or 140 per cent. between 1815 and 1895. The population of Germany now outnumbers that of France as four to three, whereas in 1815 the position was the reverse. The density of population varies exceedingly, from 194 inhabitants per square mile in Bavaria to 650 in Saxony, the average for all Germany being 248, as compared with 530 in England.

During the last half-century there has been a continuous stream of emigration to the United States and other parts of the world. According to the *Almanac de Gotha* no fewer than 5,360,000 Germans emigrated between 1850 and 1892, of

whom 4,400,000 went to the United States, 200,000 to South America, 100,000 to the British Colonies.

The United States census of 1890 showed 2,790,000 German residents, being 63 per cent. of the number who had landed in that country since 1840. Since the reconstruction of the German Empire emigration sums up 2,900,000 souls, of whom more than 80 per cent. went to the United States. While the number of Germans living abroad exceeds 3 millions, which is equal to 6 per cent. of the home population, that of foreigners residing in Germany is only 510,000, say 1 per cent. As regards the distribution of sexes the excess of females is much greater than it was forty years ago:—

Females to 1,000 Males.							
Year.	Germany.		Year.	Prussia.			
1855	1,022		1843	1,004			
1890	1,040		1890	1,038			

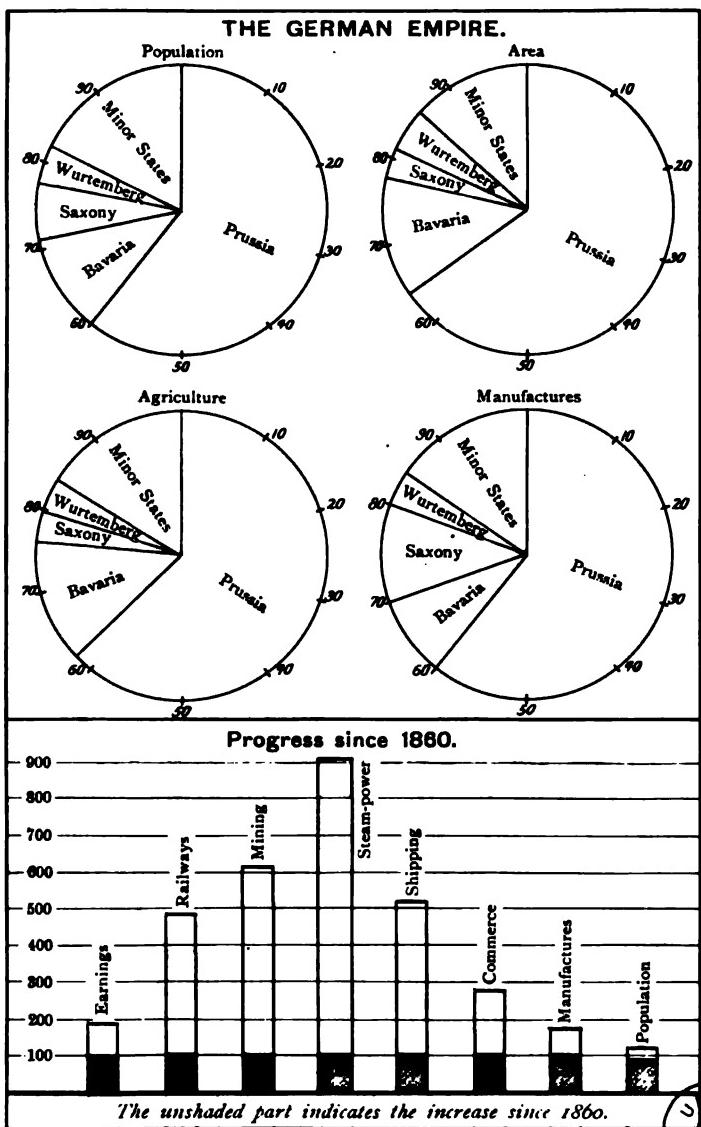
Germany has 150 cities and towns, counting only those over 20,000 inhabitants, and of these there are 26 that exceed 100,000. The aggregate population of the six largest cities has grown 500 per cent. in sixty years, namely, from 600,000 to 3,500,000, viz.:—

	1890.	1890.		1890.	1890.
Berlin .	220,000	1,580,000	Munich .	65,000	350,000
Hamburg .	112,000	570,000	Breslau .	88,000	340,000
Leipzig .	42,000	360,000	Dresden .	70,000	290,000

Collectively the above cities have grown eight times as fast as the general population.

The latest census of occupations was that of 1882, and if we suppose the same ratios to exist in the census of 1895, the figures will stand thus (manufactures, including also mining):—

	Prussia.	Bavaria.	Other States.	Total.
Agriculture .	5,830,000	1,270,000	2,250,000	9,350,000
Manufactures .	5,380,000	860,000	2,990,000	9,230,000
Commerce .	1,390,000	220,000	710,000	2,320,000
Professions, &c.	1,770,000	360,000	870,000	3,000,000
Total .	14,970,000	2,710,000	6,820,000	23,900,000



The energy or working-power of the nation at various dates was approximately as follows :—

Year.	Millions of Foot-tons Daily.			Foot-tons per Inhabitant.
	Hand.	Horse.	Steam.	
1840 . . .	2,700	7,500	160	10,360 310
1860 . . .	3,200	9,100	3,400	15,700 415
1895 . . .	4,280	11,500	30,600	46,360 900

The working-power has more than quadrupled since 1840, chiefly owing to the great development of steam, viz. :—

	Steam, Horse-Power.		
	1840.	1860.	1895.
Fixed	20,000	200,000	2,200,000
Locomotive	20,000	600,000	4,555,000
Steamboat . . . .	...	50,000	895,000
Total	40,000	850,000	7,650,000

The steam-power of Germany is 50 per cent. over that of France, although in 1860 France was 300,000 horse-power ahead of Germany.

AGRICULTURE

The cultivated area is a little less than that of France, having almost doubled in less than forty years, viz. :—

Year.	Acres.		
	Cultivated.	Uncultivated.	Total.
1856 . . .	35,330,000	93,710,000	129,040,000
1893 . . .	65,200,000	68,300,000	133,500,000

In one generation nearly 30 million acres of pasture and waste lands have been brought into cultivation, the immediate consequence of breaking up the large estates, which beneficial measure has been attended with an increase of 84 per cent. in the value of agricultural products. It was not an act of confiscation, the nobles having been allowed to retain one-half of their estates, while the other moiety was distributed among the tenants; and in compensation for what was taken from them the nobles received Prussian Consols equivalent to

eighteen years' rent, the coupons of such Consols being met by a land-tax of 5 per cent. imposed on the tenants for a term of forty-seven years. The Stein Law, as it was called, has completely changed the internal condition; fifty years ago the kingdom of Prussia was in the possession of 30,000 nobles, whereas the present number of landowners exceeds a million and a half. The total land tenure of Germany, excluding properties of less than $2\frac{1}{2}$ acres, is shown thus:—

Estates.	Number.	Acres.	Average, Acres.
Large	25,000	13,500,000	540
Medium	655,000	72,000,000	110
Small	2,275,000	27,000,000	12
Total	2,955,000	112,500,000	38

Prussia contains 65 per cent. of the productive area of Germany, and it may be presumed that the ratio of progress in the minor states has been the same as in her case. If we compare the Prussian valuation of 1837 and Viebahn's estimates for 1856 with the amount of agricultural capital in 1890, we shall find that the farming wealth of Germany has quadrupled since 1837, showing as follows:—

Year.	Millions £ Sterling.			
	Land.	Cattle.	Sundries.	Total.
1837	508	88	60	656
1856	1,304	138	144	1,586
1895	1,977	303	228	2,508

The average price of cultivated land is about £21 an acre, which appears very cheap, compared with £33 in France and £35 in the United Kingdom. The agricultural capital of the German States in 1895 was approximately as follows:—

	Millions £ Sterling.			
	Land.	Cattle.	Sundries.	Total.
Prussia	1,252	187	144	1,583
Bavaria	264	46	31	341
Wurtemburg	105	13	12	130
Other States	356	57	41	454
Germany	1,977	303	228	2,508

The crops were valued in 1840 at 105 millions sterling, but no account was taken of pastoral products. Block and Viebahn in 1856 made the total of rural products 231 millions sterling, and in 1895 it was approximately 417 millions, viz. :—

	Prussia. £	Bavaria. £	Other States. £	Germany. £
Grain . . .	65,000,000	12,400,000	31,800,000	109,200,000
Potatoes . . .	41,800,000	8,600,000	13,200,000	63,600,000
Other crops . . .	58,400,000	11,800,000	19,000,000	89,200,000
Meat . . .	37,800,000	9,400,000	15,800,000	63,000,000
Dairy . . .	35,900,000	8,900,000	15,200,000	60,000,000
Sundries . . .	19,100,000	4,900,000	8,000,000	32,000,000
Total . . .	258,000,000	56,000,000	103,000,000	417,000,000

The gross product per acre was 91 shillings in Prussia, 104 in the rest of Germany, and 96 in the whole empire, as compared with 92 shillings in France and 96 in the United Kingdom.

If we reduce all food to a grain denominator, we shall find that the total hardly exceeds 41 million tons, considerably less than 1 ton per inhabitant, viz. :—

	Quantity.	Equiv. in Grain, Tons.
Grain, tons	18,700,000	18,700,000
Potatoes, tons	29,000,000	9,700,000
Meat, tons	1,520,000	12,160,000
Wine, gallons	80,000,000	800,000
Total		41,360,000

It seems strange that a country of which only one-half is cultivated, and possessing so large a rural population, should be unable to raise enough food for its people; yet such is the fact, the net average importation of grain in the last three years having been 3,500,000 tons, and of meat 200,000 tons, together representing a value of 34 millions sterling per annum. Neumann Spallart stated in 1884 that two-thirds of the German population subsisted on rye, and that of all grain raised for human food in Germany the supply was equal to no more than ten months' consumption. In the last three years the supply averaged barely enough for eight months.

Owing to the cheapness of land, the return on agricultural capital is greater than in France, being shown as follows :—

	Millions £ Sterling.		Ratio per Cent.
	Capital.	Product.	
Germany . . .	2,508	417	16½
France . . .	3,093	416	13½

Dividing the agricultural capital among the number of farms, it gives a ratio of £840 each in Germany, against £880 in France. The product per hand is less than in France, viz :—

	Hands.	Millions £. & per Hand.	
		Capital.	Product.
Germany . . .	9,350,000	417	44
France . . .	7,220,000	416	58

In both these countries, meantime, the ratio is much below that of the United Kingdom, £91 per hand ; although the agricultural classes in France and Germany have a more laborious life than with us.

FORESTS AND FISHERIES

The area under timber is $34\frac{1}{2}$ million acres, or one-fourth of that of the empire, and the product is approximately £13,000,000, equal to 8 shillings per acre. The forests give employment to about 190,000 woodcutters, whose labour represents an annual product of £70 each.

The fisheries are insignificant, employing about 20,000 men, who take fish to the value of about 1 million sterling per annum.

MANUFACTURES

But for the wars of Frederick the Great this class of industry would have attained more importance in the eighteenth century. Silesia had long been famous for linens, Saxony for woollens, Prussia for hardware, yet an official return for Prussia in 1799 showed the total output of manufactures to

be only £8,100,000. The first steam-engine was erected at Tarnowitz in 1788, from which date factories began to multiply, and Oddy, writing in 1805, says: "No country in Europe has yet aimed so much as Prussia at the improvement of manufactures, and the most flourishing now are those of linen cloth, woollens, cottons, leather, and hardware."

Linens.—This was the most important branch of manufacture at the beginning of the century, Silesia counting 25,000 looms, which turned out damask table-cloths of great beauty. "This linen," says Oddy, "has a world-wide reputation as being almost equal to Irish, and is largely exported from Hamburg to Spain, England, and North America." An official report in 1843 valued the output of linen in all Germany at £3,700,000, of which Prussia stood for three-fourths, the home consumption in that kingdom reaching 120 million yards. The consumption of flax in 1894 was 74,000 tons, including 30,000 imported, and this consumption was equivalent to a make of about 300 million yards of linen, worth £9,000,000. This industry, nevertheless, has been in late years left far behind by other textiles.

Woollens.—Frederick the Great introduced merino sheep from Spain to improve the quality of German wool. The woollen manufacture made such progress in the present century that in 1878 Germany counted 2 million spindles, and the consumption of wool has multiplied seven-fold since 1824, at present exceeding 160,000 tons. The output is of the value approximately of 42 millions sterling, the home consumption averaging 16 shillings per inhabitant, against 19 shillings in France and 23 in the United Kingdom. The best kinds of cloth are made in Saxony and Prussia.

Cottons.—Cotton-mills existed in the last century, but made so little progress that the survey of 1825 showed only 22,000 looms. The introduction of steam-power subsequently gave such an impetus that the consumption of cotton increased ten-fold between 1835 and 1875. The annexation of Alsace-Lorraine transferred 1½ million cotton-spindles to Germany,

and in 1887 the empire counted 5,200,000 spindles, against 150,000, as stated by M'Gregor, in 1837. The principal seats of this industry are Elberfeld, Dusseldorf, and Chemnitz. The weight of cotton used in the mills is 260,000 tons, or twenty times as much as in the years 1831-40, and the output represents an approximate value of 35 millions sterling. Of this about one-fifth is exported, the home consumption being equal to 11 shillings per inhabitant, against 20 shillings in the United Kingdom.

Silks.—In Oddy's time the only German factories were in Prussia, with an output of £700,000 yearly, which was more than doubled in 1840, when the mills counted 12,000 looms and 14,000 workmen. Crefeld and Barmen are the centres of silk manufacture, with 87,000 operatives, and consuming 5000 tons yearly of raw silk. No country except France exceeds Germany in this branch of industry, the output reaching 17 millions sterling. The home consumption averages only 4 shillings per inhabitant, against 10 shillings in France.

Hemp.—This is a minor industry, the factories, according to Spallart, consuming 30,000 tons yearly, equivalent to an output worth £2,200,000.

All Textiles.—The value of these manufactures at various dates was approximately as follows:—

	.	.	.	.	Millions £ Sterling.			
					1840.	1860.	1880.	1894.
Woollens	.	.	.	.	8	16	28	42
Cottons	.	.	.	.	5	9	20	35
Silks	.	.	.	.	2	4	14	17
Linens	.	.	.	.	4	5	6	9
Sundries	.	.	.	.	2	3	4	5
Total	.	.	.	.	21	37	72	108

The sum total of textiles yearly is less than 60 per cent. of those of the United Kingdom.

Hardware.—M'Gregor says that the Germans began in the last century to make good cutlery and farm implements.

According to Malchus and later authorities the consumption of iron in Germany has been at various dates as follows :—

	Tons of Iron.			
	1826.	1850.	1872.	1893.
Made . . .	130,000	402,000	1,450,000	4,980,000
Imported . . .	10,000	50,000	650,000	50,000
Consumed . . .	140,000	452,000	2,100,000	5,030,000

The production of steel has risen still more rapidly ; from 170,000 tons in 1870 to 2,200,000 in 1893, or thirteen-fold in twenty-three years. The value of iron and steel manufactures is approximately 86 millions sterling, of which exports represent 11 millions. Home consumption averages 30 shillings per inhabitant, against 35 in the United Kingdom.

Other Metals.—The consumption of lead, copper, and zinc has likewise grown prodigiously in the last forty years, as shown thus :—

Year.	Tons of Metal Consumed.				
	Copper.	Lead.	Zinc.	Tin.	Total.
1850 . . .	5,000	25,000	15,000	1,000	46,000
1872 . . .	15,000	39,000	29,000	3,000	86,000
1892 . . .	52,000	60,000	75,000	7,000	194,000

The mineral wealth of Germany is such that the above figures fall short of the aggregate production, which in 1892 exceeded 260,000 tons. She consumes little more than half of the zinc and lead produced, but is dependent on importation for all the tin and two-thirds of the copper used in her manufactures.

Summary of Hardware.—The output of all classes of metallic wares sums up a value approximately of 105 millions sterling, having multiplied six-fold since 1850, and more than doubled since 1872. The present value of metallic manufactures is one-fourth less than that of Great Britain, but more than double that of France. It is equal to 42 shillings per inhabitant, against 77 in the United Kingdom. The hardware trade of the two countries compares as follows :—

	U. Kingdom, £.	Germany, £.
Export	45,500,000	14,300,000
Home use	<u>96,500,000</u>	<u>90,700,000</u>
Annual output . . .	142,000,000	105,000,000

Home consumption of hardware in Germany, including imports, reaches 94 millions sterling, equal to 37 shillings per inhabitant, against 48 shillings in the United Kingdom. It will be observed that Great Britain exports three times the value of hardware that Germany does.

Leather.—In the earlier part of the century the importation of hides was insignificant, but as population and manufactures have increased much faster than live-stock, it has been necessary in the last thirty years to import hides so largely that at present 40 per cent. of those tanned are from foreign countries :—

	Tons of Leather.		
	1840.	1872.	1894.
Native	50,000	73,000	82,000
Imported	5,000	30,000	50,000
Total, tons . . .	<u>55,000</u>	<u>103,000</u>	<u>132,000</u>

The value of goods manufactured yearly is now about 66 millions sterling. Hardly one-tenth is exported, the home consumption averaging 23 shillings per inhabitant, against 28 in Great Britain.

Sugar.—In 1816 the mills turned out 1400 tons of beet-sugar, and in 1850 the quantity rose to 40,000 tons. At present the average product is 1 million tons, worth 15 millions sterling, about 600,000 tons being exported. The consumption averages 18 lbs. per head, against 70 lbs. in the United Kingdom.

Liquor.—There are 25,000 breweries, which produce 24 million barrels of beer, Prussia standing for 60, Bavaria 30, per cent. of the total; they consume yearly 960,000 tons of grain, each ton producing 25 barrels of beer. Germans do not drink so much beer as is commonly believed, the consumption averaging only 20 gallons per head, against 30 in

the United Kingdom. There are 22,000 distilleries, turning out 80 million gallons of spirits, value 8 millions sterling: consumption averages $1\frac{1}{2}$ gallon per inhabitant. The annual product of breweries and distilleries is 63 millions sterling.

Printing.—The principal seat of this industry is Leipzig, long famous for its book fairs. The first steam printing press was erected in 1848, and since that year the business has grown so rapidly that in 1888 Leipzig turned out 60 million volumes, valued at 6 millions sterling. The newspapers of Germany circulate about 150 million copies monthly, and the total value of the printing and publishing trade is approximately 18 millions sterling, say 7 shillings per inhabitant.

Machinery.—According to Zehden there are in Prussia alone 300 machine factories, which produce everything requisite for railways, agriculture, mining, &c. Two of them are among the most remarkable in the world, namely, Krupp's at Essen, and Borsig's at Berlin. The first mentioned covers one thousand acres, employs 20,000 men, has 310 steam-engines representing 10,000 horse-power, and possesses 70 steam-hammers (the largest being a 50-ton hammer, the erection of which cost £100,000 sterling), the factory consuming yearly a million tons of steel in making cannon, machinery, &c. The Borsig factory was started in 1837 by a man of that name, to whom a friend lent £1500 for the purpose; before his death Mr. Borsig had turned out 3600 locomotives, and accumulated a fortune of 3 millions sterling, his staff counting 10,000 operatives. Germany has 750 machine factories, and their output is included in the estimate of metallic industries given already.

Clothing.—This industry amounts approximately to 69 millions sterling, of which 4 millions are exported: home consumption is equivalent to 25 shillings per inhabitant, against 34 shillings in France and 43 in the United Kingdom.

Houses and Furniture—The census of 1880 showed 1,004,000 men engaged in building and carpenters' work,

and their product may be estimated at 69 millions sterling, that is 3 per cent. of the capital value of houses and furniture.

Summary.—The total value of manufactures at various dates was approximately as follows:—

	Millions £ Sterling.		
	1826.	1869.	1894.
Textiles . . .	10	52	108
Hardware . . .	8	39	105
Leather . . .	15	47	66
Food . . .	70	95	135
Clothing . . .	40	60	69
Houses and furniture . .	35	52	69
Sundries . . .	44	86	138
Total . . .	222	431	690

The total for 1894 gives an average of £79 per operative, against £106 in the United Kingdom. It is not unreasonable to suppose that the value of manufactures produced in the several States is in ratio with the number of hands employed, in which case the table for 1894 will show as follows:—

	Operatives.	Millions £.	Ratio.
Prussia . . .	5,030,000	394	57·2
Saxony . . .	970,000	76	11·0
Bavaria . . .	860,000	67	9·7
Minor States . . .	1,970,000	153	22·1
Total . . .	8,830,000	690	100·0

Prussia does not hold so high a ratio in manufactures as in agriculture or in the general population of the empire.

MINERALS

Coal.—This is the mineral of most importance, Germany occupying the third place among nations as a producer of coal. In 1840 there was not much difference between France and Germany in this respect, but since then the latter has gone much ahead, the quantities raised being as follows:—

	Tons Raised.		
	1840.	1870.	1894.
Germany . . .	3,400,000	34,000,000	99,100,000
France . . .	3,300,000	13,300,000	25,200,000

One-fourth of German coal is lignite or "brown" coal. The most valuable collieries are those of Prussia, with 256,000 miners, who raise 80 per cent. of the German total. Consumption averages 90 million tons, or almost 2 tons per inhabitant, against 4 tons in the United Kingdom.

Ironstone.—There are 1070 iron mines, mostly in Silesia and Westphalia, the output of 1894 reaching $12\frac{1}{2}$ million tons of ore, which gives about 36 per cent. of metallic iron. Large quantities of ironstone are imported from Biscay, and the total make of iron in 1893 was 4,980,000 tons, having increased ten-fold since 1860.

Copper.—The production of copper ore has multiplied twelve-fold since 1850, being now 600,000 tons, raised in Prussia and Saxony. The ores are poor, yielding hardly 3 per cent. of bar copper, as compared with American ores, giving 18 per cent. German factories consume 50,000 tons of bar copper yearly, more than half being imported either as copper or regulus.

Lead.—Production has grown six-fold since 1848; in 1893 it reached 95,000 tons of pig lead, that is 55 per cent. of the weight of ore raised.

Zinc.—Prussia produces more than half the zinc of the world: the ores raised in 1894 amounted to 730,000 tons, which gave 140,000 tons of metallic zinc, a yield of nearly 20 per cent. Home consumption is 70,000 tons, just half the product.

Gold and Silver.—About 500 tons of silver are produced yearly, worth £2,400,000. The gold mines in the Harz Mountains give a small amount, not quite £50,000 a year.

Salt.—This is made in salt-pans at Halle, and rock-salt is extracted at Erfurt. Total product, 2,400,000 tons yearly.

Summary.—The production of coal and of metals from native ore was as follows:—

Year.	Production, Tons.				
	Coal.	Iron.	Zinc.	Lead, &c.	
1850 .	6,600,000	350,000	30,000	18,000	
1870 .	34,000,000	1,340,000	65,000	59,000	
1893 .	95,500,000	4,600,000	140,000	119,000	

The mines employ 400,000 men, the product of whose labour is valued at the pit's mouth at 34 millions sterling, say £85 per man. Prussia stands for 80, Saxony 10, per cent. of the total value. The weight of mineral raised in 1894 was 115 million tons, or 287 per miner, as compared with 91 in 1850 and 180 in 1870 : thus by means of improved machinery two miners now raise as much as three did in 1870 or six in 1850.

COMMERCE

An official report in 1856 showed that the foreign trade of the Zollverein had risen to 106 millions sterling, from 40 millions in the year 1822. There was a great increase after the Austro-German war of 1866, and a steady rise until 1890, when imports and exports summed up 375 millions sterling, but since the latter year there has been a decline. Imports and exports showed at various dates as follows :—

	Millions £ Sterling.			
	1822.	1840.	1872.	1894.
Imports . . .	19	25	163	198
Exports . . .	21	27	116	148
Total . . .	40	52	279	346

The excess of imports shows the prosperous condition of the empire, whereas fifty years ago there was an excess of exports, which always happens in a poor country. The average of returns for five years ending December 1892 shows thus :—

	Millions £ Sterling.			
	Imports from.	Exports to.	Total.	Ratio.
Great Britain . . .	29	31	60	16·9
Austria . . .	27	16	43	12·1
United States . . .	18	18	36	10·0
Russia . . .	24	8	32	8·9
Holland . . .	13	13	26	7·3
France . . .	12	11	23	6·6
Belgium . . .	14	8	22	6·3
Other countries . . .	60	54	114	31·9
Total . . .	197	159	356	100·0

The trade of Germany exceeds that of France by 70 millions sterling, or 25 per cent., whereas in 1872 France surpassed Germany.

Shipping.—The carrying-power of German merchant shipping has grown seven-fold since the statement published in Lloyd's List for 1842, the increase of steamers in late years being remarkable:—

Year.	Tons Register.			Carrying-power.
	Steam.	Sail.	Total.	
1840 .	1,000	550,000	551,000	554,000
1872 .	130,000	870,000	1,000,000	1,890,000
1895 .	890,000	660,000	1,550,000	4,220,000

Germany is now the second carrying-power on the high seas, being inferior only to Great Britain; but if the shipping on the internal waters of the United States were counted, the American tonnage would be three times that of Germany.

Internal Trade.—The amount of internal trade at various dates was approximately as follows:—

	Millions £ Sterling.		
	1840.	1860.	1894.
Agriculture	170	295	417
Manufactures	285	431	690
Minerals, forestry, &c. . . .	10	21	48
Imports	25	148	198
Total	490	895	1,353

Internal trade compared with population shows an average of £26 per inhabitant, against £31 in France. The gross amount has trebled since 1840, whereas in France it has not quite doubled.

Railways.—A line was made in 1840 from Berlin to Leipzig, 106 miles, but very little progress was made till the North-German Confederation was formed, after the campaign of Sadowa, in 1866. Previously the concession of a railway two or three hundred miles in length required the sanction of a dozen petty governments. The following table shows the length open at various dates:—

	Miles.			
	1840.	1860.	1880.	1894.
Prussia . . .	106	3,450	12,640	17,490
Bavaria . . .	40	1,130	3,000	3,710
Other States . .	194	2,400	5,050	6,650
Total . . .	340	6,980	20,690	27,850

Germany has more miles of railway than any other country except the United States. Her lines represent a cost of 555 millions sterling, or almost £20,000 a mile: they are all State property, except 2900 miles. Goods traffic is equivalent to 136 million tons carried 100 miles. Traffic returns per mile compare with those of France thus:—

	Receipts, £.	Expenses, £.	Profit, £.
Germany	2,564	1,664	900
France	2,195	1,253	942

The net return on capital is $4\frac{1}{2}$ per cent. in Germany and $3\frac{1}{2}$ in France, the French lines having cost 36 per cent. more per mile in construction. Goods tariff in Germany is 10 per cent. cheaper than in France, which is a great benefit to internal trade.

Banks.—The old Bank of Prussia, founded in 1765, was reconstructed in 1875 as the Imperial Bank, with a capital of 6 millions sterling. There are numerous joint-stock banks, and in 1887 the *Almanac de Gotha* published a statement showing current discounts to amount to 164 millions sterling. The money in use in 1894 comprised 132 millions gold, 45 silver, and 61 paper, in all 238 millions sterling, or less than £5 per inhabitant. Money compared with the amount of internal trade in Germany, France, and United Kingdom shows thus:—

	Millions £ Sterling.		Ratio per Cent.
	Intern. Trn . .	Money.	
Germany	1,353	238	18
France	1,201	466	39
United Kingdom . .	1,610	150	9

It appears that Germany uses relatively twice as much money as Great Britain, and not half as much as France.

EARNINGS AND WEALTH

The earnings of the people of Germany at various dates were approximately as follows:—

		1840.	1869.	1894.
Agricultural	.	102	177	250
Manufacturing	.	93	215	345
Mines, forests, &c.	.	10	21	48
Trade	.	49	90	136
Transport	.	51	94	142
House-rent	.	20	33	92
Domestics	.	13	22	61
Public service	.	16	26	94
Professions	.	35	68	117
Total	.	889	746	1,284

The class which in Prussia is subject to income-tax was estimated by Soetbeer in 1890 to have an aggregate income of 500 millions sterling, against 404 millions in 1879. The earnings of the principal States in 1893 were:—

	Millions & Sterling.					
	Prussia.	Bavaria.	Saxony.	Wurtemberg.	Other States.	Germany.
Agricultural	155	35	10	10	40	250
Manufacturing	197	84	38	16	60	345
Mines, &c.	86	3	3	1	5	48
Trade	80	15	11	6	23	136
Transport	85	16	11	6	24	142
House-rent	55	10	6	4	17	92
Domestics	36	7	4	3	11	61
Professions, &c.	126	23	16	8	39	211
Total	769	143	89	54	219	1,284

Official returns for Prussia show that the number of persons with incomes over £150 a year rose from 173,000 in 1881 to 319,000 in 1893, an increase of 85 per cent. As Prussia stands for 60 per cent. of the German Empire, we may construct from the assessments for that kingdom an estimated distribution of earnings thus:—

Income.	Prussia.	Other States.	Germany.	Amount, Millions £.
Over £1,100 .	18,100	11,900	30,000	115
£480 to £1,100 .	31,100	20,900	52,000	39
£240 to £480 .	55,000	37,000	92,000	31
£150 to £240 .	215,000	145,000	360,000	67
Under £150 .	13,370,800	8,945,200	22,316,000	1,032
Total .	13,690,000	9,160,000	22,850,000	1,284

Wealth.—The components of wealth in 1895 were approximately as follows:—

	Millions £ Sterling.					
	Prussia.	Bavaria.	Saxony.	Wurtem- berg.	Other States.	Germany.
Land .	1,252	264	54	105	302	1,977
Cattle, &c.	331	77	18	25	80	531
Railways	348	65	36	20	86	555
Factories	131	22	25	11	41	230
Houses	917	157	107	66	278	1,625
Furniture	459	78	54	33	139	763
Merchandise	403	76	55	28	115	677
Bullion	111	20	16	8	29	184
Sundries	988	190	91	74	267	1,610
Total .	4,940	949	456	870	1,337	8,052

Land.—There is no official valuation of land for the whole empire. In 1837 a valuation of Prussia showed that the lands of that kingdom were then worth 305 millions sterling; a second made in 1869 amounted to 664 millions sterling. Viebahn valued all the land of Germany in 1856 at 1304 millions sterling, and made the average per acre for Wurtemberg 50 per cent. higher than in the rest of Germany. In 1880 a valuation of Wurtemberg lands amounted to 105 millions sterling; this was equal to £30 an acre for the productive area, and £6 an acre for forest. Following Viebahn's opinion, that other German land is worth two-thirds of the Wurtemberg price, we may estimate the rest of Germany, that is, the productive area, at £20 an acre, and put down all forest land at £6 an acre, leaving out of account 12,100,000 acres of waste or mountain land. The result will be as follows:—

	Acres (000's omitted).		Value, Millions £.		
	Productive.	Forest.	Productive.	Forest.	Total.
Prussia . . .	56,500	20,400	1,130	122	1,252
Bavaria . . .	11,400	5,900	228	36	264
Wurtemberg . . .	3,200	1,450	96	9	105
Other States . . .	15,800	6,750	816	40	856
Germany . . .	86,900	34,500	1,770	207	1,977

According to the land-tax of Bavaria in 1890 the official valuation of that kingdom appears to have been 240 millions sterling, that is 9 per cent. less than the above estimate, but it is known that official valuations are under the reality. The total agricultural wealth of the German Empire, between land, cattle, and sundries, amounts approximately to 2508 millions sterling, being an average of £840 per farm, against £880 in France.

Houses.—If we take the house-tax of 1890 for a guide it must be remembered that the official valuation (as occurs in France) is much below the letting value. The following estimate supposes the venal value to be twenty-five times the apparent assessment:—

	Millions £.		Value £ per Inhabitant.
	Rent.	Value.	
Prussia	36·7	917	30·6
Bavaria	6·3	157	28·0
Wurtemberg	2·6	66	32·5
Darmstadt	1·4	35	35·0
Other States . . . . .	...	350	30·5
Empire	—	1,525	30·5

The rental of "other States" not being known, the value of house property is assumed in their case to be £30·5 per inhabitant, the average for the rest of Germany.

Summary.—The amount of wealth compares with population in the several kingdoms as follows:—

	Millions £.	Population.	£ per Head.
Prussia	4,940	31,500,000	157
Bavaria	949	5,770,000	165
Saxony	456	3,750,000	122
Wurtemberg	370	2,070,000	179
Small States	1,337	8,670,000	154
Germany	8,052	51,760,000	156

The wealth of Germany appears to be 16 per cent. less than that of France, although the population is one-third greater; hence the ratio per inhabitant is very much less, being £156 in Germany to £252 in France. Among Continental nations Germany holds the second place as regards the gross amount, but not as to ratio per head.

FINANCE

The revenue of the States now composing the empire has grown thirteen-fold since 1822, as shown thus :—

Year.	Millions & Sterling.					Total.
	Prussia.	Bavaria.	Other States.	General Taxes.		
1822 . . .	7·0	2·5	4·9	0	14·4	
1867 . . .	25·3	5·9	9·3	11·2	51·7	
1895 . . .	97·5	16·4	28·1	46·0	188·0	

It must not be supposed that taxation has risen in the same degree as revenue, one-third of which proceeds from State railways, constructed or purchased since 1867. The system of finance is complicated, each of the States receiving from the Imperial Treasury a quota on account of Customs and Excise, and giving back an amount almost equal as its contribution to the Federal Government. If we eliminate this quota the revenues in 1894 will be found to sum up 119 millions sterling, besides the imperial revenue of 46 millions :—

	Millions & Sterling.				Total.
	Prussia.	Other States.	Imperial.		
Railways . . .	49·2	13·7	1·2		64·1
Crown Estates . . .	24·0	6·4	9·0		39·4
Taxes . . .	24·3	24·4	35·8		84·5
Total . . .	97·5	44·5	46·0		188·0

Crown estates comprise not only lands and forests, but also the Post-office, telegraphs, and other public services. Taxes consist of the imperial customs and excise, income-tax, poll-

tax, stamps, &c., all which make up an aggregate of 85 millions sterling, equal to 33 shillings per inhabitant, while municipal and other local taxes amount to about 45 millions, and this brings up the total taxes to 130 millions sterling, say 50 shillings per inhabitant. The incidence of taxation, therefore, as compared with national earnings is much lighter than in France, but heavier than in the United Kingdom, viz. :—

	Millions £ Sterling.		
	Taxes.	Earnings.	Ratio of Tax.
Germany	130	1,284	10·1
France	144	1,199	12·0
United Kingdom	122	1,423	8·6

The foregoing table, of course, includes both national and local taxes.

Debt.—The amount of debt at various dates was as follows :—

Year.	Millions £ Sterling.					Total.
	Prussia.	Bavaria.	Other States.	Imperial.		
1822	26	10	18	...		54
1867	49	30	49	...		128
1896	318	69	112	105		604

State railways represent a value of 487 millions, so that the real debt of Germany may be said not to exceed 117 millions, or 45 shillings per inhabitant. About 300 millions sterling of the debt is held in 4 per cents., the rest in 3 or $3\frac{1}{2}$ per cents., and as the railways earn more than 4 per cent. the debt is no burthen to the nation.

VI

RUSSIA

RUSSIA and Poland have been increasing very fast in population in the last forty years, viz.:—

		Population.		Inhabitant per sq. mile.	
		1855.	1895.	1855.	1895.
Russia	:	59,830,000	95,750,000	31	50
Poland	:	4,760,000	9,220,000	97	188
Total	.	64,090,000	104,970,000	33	54

Where three men stood forty years ago five stand to-day. The cultivated area being 255 million acres, or $2\frac{1}{2}$ acres per inhabitant, the production of grain is more than sufficient for the needs of the empire, but some of the provinces, especially Poland, Podolia, and Kiev, are so thickly populated that they could not support more than their present number of inhabitants. The latest vital statistics for European Russia, including Poland, give the averages for five years ending December 1889 as birth-rate 47, death-rate 32, per thousand.

Birth-rate is the highest in the world, probably because of the early marrying age, the average being twenty-five for men and twenty-one for women. Death-rate is 50 per cent. higher than in England, which is mainly caused by infant mortality: of 1000 children born 575 die under five years of age, as compared with 238 in England. Nevertheless the natural increase is such that population doubles in forty-six years. The census of 1882 showed that 89 per cent. of the population were rural, 11 per cent. urban, the latter comprising 294 cities and towns with an aggregate of 10,400,000 souls. The official

statement of 1895 makes the population of Russia 105 millions, and the total may be said to be made up thus: 95 million Russians, 7 million Poles, 3 million Jews. The number of foreign residents is small, only 150,000, and that of Russians and Poles living abroad is barely 500,000, of whom 330,000 are in the United States, most of the remainder being Mennonites who emigrated to Canada and Argentina since 1870, to avoid military service, and who are admirable colonists. The last occupation-census was that of 1872, which showed the occupations of male adults only. It is to be supposed that in Russia, as happens in most countries, there are in each avocation of life 50 females to 100 male workers. Allowing for the increase of population since 1872 there would be at present 38,400,000 persons engaged in agriculture, 3,660,000 in manufactures, and 6,240,000 in other pursuits. But it must be borne in mind, as Zehden observes, that the Russian peasant is often both an artisan and a tiller of the soil, for which reason we must transfer 10 per cent. of the Moujiks from the agricultural to the manufacturing category, and the occupations will then show as follows, in 1895:—

	Agriculture.	Manufactures.	Commercial, &c.	Total.
Males . .	23,100,000	4,980,000	4,120,000	32,200,000
Females . .	11,550,000	2,490,000	2,060,000	16,100,000
Total . .	34,650,000	7,470,000	6,180,000	48,800,000

The working-power of Russia has risen 60 per cent. since 1860, viz.:—

Year.	Millions of Foot-tons Daily.				Foot-tons per Inhabitant.
	Hand.	Horse.	Steam.	Total.	
1860 . .	6,500	43,500	800	50,800	780
1894 . .	9,100	62,400	11,200	82,700	780

The introduction of railways has brought a great increase of steam-power, which has multiplied fourteen-fold since 1860, viz.:—

Year.	Horse-power of Steam.				Total
	Fixed.	Locomotives.	Steamboats.	Total	
1860 . .	60,000	100,000	40,000	200,000	
1894 . .	350,000	2,200,000	240,000	2,790,000	

While Russia has double the population, she has only one-third of the steam-power, of Germany, from which we may infer that she could produce six times as much as she does if she had an adequate supply of steam-power. The waste of labour in Russia is prodigious, but is not understood by the governing class; men and women toil out their lives in producing a minimum, and their existence is such a drudgery that this is possibly the latent cause of the discontent which finds expression in Nihilism.

AGRICULTURE

Before the Crimean War agriculture was of the rudest kind: machinery was unknown; the peasants were bought and sold on the estates, like cattle. Since 1850 the agricultural capital has quintupled, showing as follows:—

Year	Millions £ Sterling.			
	Land.	Cattle.	Sundries.	Total.
1850 . . . :	295	140	45	480
1894 . . . :	2,113	350	247	2,710

The emancipation of the serfs, in 1861, gave a great impulse to farming and caused the price of land to double. During an interval of twenty years down to 1892, the clearing of the forests and extension of the improved area proceeded at the rate of 8 million acres yearly. If we compare the improved area in later years with Hermann's estimate for 1830, we find as follows:—

Year.	Millions of Acres.		
	Improved.	Forest, &c.	Total.
1830 :	195	862	1,057
1872 :	805	939	1,244
1892 :	589	752	1,341

One-fifth of European Russia is desert, the productive portion being only 1087 million acres, viz.:—

	Acres.
Under crops	255,000,000
Pasture	334,000,000
Forest	498,000,000
Total	1,087,000,000

The crown and the nobles still hold three-fourths of the empire, and as a rule the Moujik, or peasant, is limited to a patch of 10 acres, whereas there is sufficient land to give him 20 or 30 acres, as appears from the table of tenure :—

	Millions of Acres.				
	Crown.	Nobles.	Merchants.	Peasants.	Total.
Russia . . .	480	160	94	878	1,057
Poland . . .	2	15	1	12	30
Total . . .	482	175	95	885	1,087

There are some 50,000 nobles whose estates cover a larger area than the German Empire. Peasant proprietors, on the other hand, possess no more than 6 per cent. of Russia, if we except the lands in Communes. In 1893 there were 6,750,000 farms held by emancipated serfs, covering 63½ million acres, which gives an average of not quite 10 acres each. There were also Communes or villages, with 13 millions of male adults, holding collectively 310 million acres, of which nearly half was forest, leaving about 12 acres of improved land to each male adult. We have seen that the total number of hands is about 38½ millions, and if we divide among them the value of tillage and pastoral products it gives to each only £14 a year. The value in 1894 was approximately as follows :—

Grain	£258,000,000
Other crops	112,000,000
Meat	87,000,000
Dairy, &c.	88,000,000
Total	£540,000,000

The improved area being 589 million acres the gross product averages less than 19 shillings per acre, as compared with 96 shillings in Germany and 92 in France. The total agricultural capital of the empire, as already shown, amounts to 2710 millions sterling ; hence the gross annual product is equal to 20 per cent. on capital, as compared with 16½ per cent. in Germany and 13½ in France. There is usually a

large surplus of grain for exportation, the production and consumption in the years 1892-93-94 averaging as follows:—

	Millions of Bushels.				
Crop . . .	Wheat.	Rye.	Oats.	Other Grain.	Total.
Crop . . .	312	697	560	441	2,010
Exported . . .	94	27	37	108	266
Consumption . . .	218	670	523	388	1,744

The value of grain exported in the above years averaged 28 millions sterling. The quantity under the head of consumption was disposed of in the following manner: 300 million bushels kept for seed, 480 given to cattle and horses, and 960 used for human food; three-fourths of the population live on rye, one-fourth on wheat. The foregoing table is for Russia proper, taking no account of the crops of Poland, which average 105 million bushels yearly, and are only sufficient for home consumption. Neither has Poland any surplus of meat, the production averaging only 250,000 tons, equal to 60 lbs. per inhabitant. Russia has a small surplus of meat, the weight of live cattle annually exported being equivalent to 20,000 tons of dead meat. The production of meat is approximately as follows:—

	Tons of Meat.			
	Beef.	Mutton.	Pork.	Total.
Russia . . .	1,230,000	440,000	370,000	2,040,000
Poland . . .	150,000	40,000	60,000	250,000
Total . . .	1,380,000	480,000	430,000	2,290,000

Large as seems this supply of meat it suffices to give no more than 50 lbs. to each inhabitant, which is a lower ratio than in any other country, except Italy and Portugal, and accounts for the large consumption of grain. If we reduce all food to a grain denominator, we find the total product for Russia and Poland in 1894 as follows:—

	Quantity.	Equiv. in Grain.
Grain, tons . . .	58,400,000	58,400,000
Potatoes, „ . . .	14,100,000	4,700,000
Meat, „ . . .	2,290,000	18,300,000
Wine, gallons . . .	70,000,000	700,000
Total . . . . .	...	82,100,000

This is not quite double the quantity produced in France, while the number of hands is as five to one, another indication of the waste of labour in Russia. Civilisation has yet a long road to travel in the dominions of the Czar. The best farms are those of the nobles, the peasants being too poor to cultivate their land properly: the nobles put 14 tons of manure to the acre, the peasants only 7, and the result is that the seed sown by the former produces fifteen-fold, that by the latter only six-fold. The gross product of a Moujik's ten-acre farm is hardly £20 a year, from which we have to deduct one-third for taxes, seed, &c., leaving him £13 to support his family. His food is so bad that an English traveller writes thus:—"No man but a Russian could subsist on such fare: it consists of rye-bread and mushroom soup, worth twopence a day." He lives in a hut five feet square; his wife helps him at the plough, often in less than a week after her confinement, and the poor women have such a wretched life that 5 per cent. of wives die in child-bed, or double the European average.

FORESTS AND FISHERIES

The forests cover 498 million acres, an area almost four times as large as the German Empire. The clearance of timber since 1872 has averaged 7 million acres yearly, and the forest area diminishes, year by year, as population increases. Crown forests in 1860 covered 333 million acres, and in 1878 Strebinski found them reduced to 180 million acres. Besides Crown forests, which belong to the State, the Czar owns 30 million acres of timber, in which he employs 27,000 wood-cutters. The value of firewood and timber cut yearly averages 1 shilling per acre in Crown forests, 2 in communal or private. Buschen estimated the yield in 1864 at the sum of 24 millions sterling; at present it reaches about 40 millions:—

	Tons.	Value, £.
Firewood	90,000,000	18,500,000
Timber	40,000,000	26,700,000
Total	<u>130,000,000</u>	<u>40,200,000</u>
		£

Comparing the product with the area, it appears that each acre yields about $\frac{1}{2}$ ton, value 20 pence, whereas in Germany the product averages 8 shillings per acre.

Fisheries are of minor importance: the take in 1880 was estimated at 220,000 tons, value £2,200,000.

MANUFACTURES

In 1824 Schubert reported 5300 textile factories, employing 250,000 operatives and turning out goods to the value of £5,100,000, which gives the very low average of £20 per operative. Forty years later Buschen's survey gave the output of 15,000 factories as 52 millions sterling, adding that he considered the factories to represent only 40 per cent., the artisans and small industries 60 per cent., of the total annual value of goods manufactured. The following statement therefore applies only to factories:—

Year.	Factories.	Operatives.	Millions £.	£ per Hand.
1824 . . .	5,286	250,000	5	20
1864 . . .	15,453	465,000	52	112
1894 . . .	26,200	1,171,000	164	140

The actual value of manufactures is more than double the output of the factories.

Textiles.—This branch of industry has doubled in the last thirty years; the production was approximately as follows:—

	Millions £ Sterling.		
	1824.	1864.	1894.
Cottons	2	11	20
Linens	1	12	24
Woollens	3	9	29
Silks . . . . .	...	2	3
Total	6	34	76

Cottons.—Schubert's table for 1824 showed 484 mills, consuming yearly 2000 tons of cotton and yarn. In 1840 the

consumption had risen to 20,000, and now it exceeds 140,000 tons. The mills contain 3 million spindles, and produce sufficient fabrics for home consumption, value 20 millions sterling, or 4 shillings per inhabitant, as compared with 11 shillings in Germany.

Linens.—Factories consuming flax and hemp have always been classified together, and in 1864 Buschen found that their number had trebled since 1824. It is, however, in the last twenty years that this industry has made the greatest strides, the consumption of flax and hemp rising from 110,000 tons in 1872 to 230,000 in 1892. Zehden states the value of goods made in 1887 to reach 25 millions sterling, a sum surpassing the output of this class of goods in any other country of the world.

Woollens.—Russia had not until recently a sufficient number of mills to consume her wool-clip, but in 1893 she imported more wool than she exported, production and consumption having been as follows:—

Year.	Clip.	Tons, Wool.	
		Exported.	Home Use.
1824	45,000	3,000	42,000
1864	73,000	21,000	52,000
1894	95,000	...	110,000

The mills do not fully meet the requirements of the empire, woollen goods being imported yearly to the value of £400,000. It is surprising to find that notwithstanding the severity of the climate the annual consumption of goods is equivalent to no more than 2 lbs. of raw wool per inhabitant, against 7 lbs. in Germany, a striking proof of the poverty of the Russian people.

Silks.—Buschen reported 326 mills, with an output of £2,300,000, that is six times the amount given by Schubert in 1824. Not much progress has been made since 1864, the mills in 1892 consuming only 900 tons of raw silk, and the output, according to the Bull. Statist., being only 3 millions sterling.

Hardware.—There were 900 furnaces at work at Perm, Novgorod, &c., in 1828 ; Tula, the Sheffield of Russia, had 600 cutlery establishments. Iron was, meantime, dearer than bread, which compelled the Moujiks to use wooden ploughshares and leave their horses unshod. Tegeborski's report in 1866 showed 1730 foundries, and since then the consumption of iron has trebled. The production and consumption of iron were :—

Year.	Tons of Iron.		
	Produced.	Imported.	Consumed.
1828 . . .	115,000	...	115,000
1860 . . .	290,000	14,000	304,000
1892 . . .	1,060,000	80,000	1,140,000

The consumption of copper has for several years ranged between 4000 and 6000 tons. According to an official report for 1891 the output of all metallic wares is a little over 15 millions sterling.

Leather.—This industry is universal throughout the empire, and the leather derives its fragrant odour from birch-oil, used in tanning. Russia produces hides sufficient to make 138,000 tons of leather yearly, but she exports a portion, and the actual make of leather hardly exceeds 114,000 tons. The value of leather manufactures turned out yearly is about 57 millions sterling, equal to 11 shillings per inhabitant, whereas in Germany the average is 23 shillings.

Sugar.—Some beet-root sugar was made near Tula in 1811, but it was not till after the Crimean War that the industry attained importance. When Buschen wrote, in 1864, the beet-crop reached a million tons, from which 50,000 tons of sugar were extracted, in 430 mills. A report for 1887 shows 405,000 tons of beet-sugar, valued at £7,200,000, the quantity exported averaging 90,000 tons yearly. The home consumption is only 7 lbs. per inhabitant, against 18 lbs. in Germany.

Food.—The output of breweries and distilleries was valued by Buschen in 1864 at £8,300,000, and the official valuation for 1882 amounts to £19,500,000. The latest return for

flour-mills, &c., is £39,200,000, making a total of £58,700,000 for food manufactures.

Summary.—The total value of manufactures at the three periods already considered was approximately as follows:—

	Millions £ Sterling.		
	1824.	1864.	1894.
Textiles	6	34	76
Hardware	5	10	15
Leather	7	26	57
Food	20	30	59
Clothing	15	25	57
Houses and furniture	10	18	40
Sundries	17	34	76
Total	80	177	380

The manufacturing industry is less than £4 per inhabitant, compared with £14 in Germany, £15 in France, and £22 in the United Kingdom.

MINERALS

Gold.—The Ural gold-fields began working at Katerinenberg in 1745, but made such little progress that in 1810 the product was only 10,000 oz., worth £40,000. Official returns since 1821 show that the yield in seventy years has been nearly 1600 tons, worth 224 millions sterling. Meantime the ore is exceedingly poor: in 1890 the miners raised 23 million tons, from which were extracted 39 tons of gold (Ural mines 10, Siberian 29), that is, 600,000 tons of ore to produce 1 ton of gold. The yield was equivalent to 5 shillings a ton, and coal would have been worth more than this. There are about 160,000 miners, and the gold produced in 1890 represented £5,600,000, or £35 per man. But for convict labour such mines would hardly pay working expenses.

Silver.—The Siberian mines have been working since 1704, the present yield averaging 10 tons, worth about £40,000, yearly. In the last seventy years the total output has been 11 millions sterling.

Gold and Silver.—Official records of all mines in the empire since 1821 show as follows:—

Period.	Tons.		Value, £.		
	Gold.	Silver.	Gold.	Silver.	Total.
1821–40 .	102	450	14,400,000	8,800,000	18,200,000
1841–80 .	1,124	680	157,400,000	6,800,000	163,700,000
1881–90 .	360	110	50,000,000	600,000	50,600,000
70 years .	1,586	1,240	223,800,000	10,700,000	234,500,000

Coal.—The coal-field of the Don yielded 10,000 tons in 1840. Fuel for all purposes is so cheap and abundant in the form of firewood that the use of coal is limited. The production is nevertheless short of the requirements of the country, the consumption showing as follows:—

Year.	Tons of Coal.		
	Raised.	Imported.	Consumed.
1860 . . .	180,000	720,000	850,000
1880 . . .	4,100,000	1,950,000	6,050,000
1892 . . .	6,100,000	1,700,000	7,800,000

In 1887 there were 32,000 coal-miners, who raised 140 tons each, as compared with 285 in Great Britain, one English miner raising as much as two Russian.

Salt.—The production has trebled since 1860, and now exceeds 1,200,000 tons yearly, all used for home consumption, say 27 lbs. per inhabitant.

Petroleum.—The springs near the Caspian Sea began to yield in 1863, and in twenty-seven years, down to December 1889, they produced 130 million barrels of crude oil, equal to 36 millions of refined, and worth 26 millions sterling. The product in 1893 was 28 million barrels crude, or 8 millions of refined oil, and of this latter quantity 5½ million barrels were exported, representing a value of £2,200,000 sterling. The output of the wells is, therefore, worth 3 millions sterling, or about 2 shillings per barrel of crude oil.

Summary.—The mining industries sum up a yearly total of 36 million tons, representing a value of 12 millions sterling;

they have 2950 water and steam engines, with an aggregate of 100,000 horse-power, and employ 420,000 miners, whose average product is, therefore, less than £30 sterling.

COMMERCE

Russia being emphatically a poor country, there has always been a great excess of exports over imports, as the following table shows :—

Year.	Millions £ Sterling		
	Imports.	Exports.	Total.
1840	11	15	26
1860	22	26	48
1894	56	68	124

Down to 1857 the tariff all but prohibited the importation of foreign goods, and in this manner crippled also the export trade; but its relaxation brought such an improvement that imports and exports have more than doubled in thirty years. The returns for five years ending December 1892 give the following averages :—

	Millions £ Sterling.			
	Imports from.	Exports to.	Total.	Ratio.
Great Britain	9	20	29	30·2
Germany	11	18	29	30·2
France	2	4	6	6·2
Various	18	19	32	33·4
Total	35	61	96	100·0

The foreign trade is less than £1 sterling per inhabitant, as compared with £7 in Germany.

Shipping.—The nominal tonnage of Russian shipping, including that of Finland, has trebled, and the carrying-power has quintupled, in fifty years, viz. :—

Year.	Tons.			
	Steam.	Sail.	Total.	Carrying-power.
1842	10,000	230,000	240,000	270,000
1894	240,000	510,000	750,000	1,470,000

*

So deficient is Russia in shipping that 85 per cent. of her trade is done on foreign bottom, mostly British.

Internal Trade.—The amount has been at various dates approximately as follows:—

	Millions £ Sterling.		
	1824.	1864.	1894.
Agriculture	190	330	540
Manufactures	80	177	380
Forestry, minerals, &c.	15	30	54
Imports	13	23	56
Total	298	560	1,080

The total for 1894 is not much for a people numbering 105 million souls, being less than £10 per head, against £26 in Germany: in the world's economy one German is worth three Russians.

Railways.—The first line was opened in 1837, from St. Petersburg to Tsarskoye Selo, 18 miles, but very little progress was made until after the death of Czar Nicholas in 1855, at which date Russia had only 850 miles of railway. Since then the construction has proceeded at the rate of 500 miles a year, and the length now in traffic, including Finland, is 23,100 miles, which have cost 349 millions sterling, say £15,600 per mile. Traffic per mile compares with German lines thus:—

	Receipts, £.	Expenses, £.	Profit, £.
German	2,564	1,864	900
Russian	1,610	970	640

The net profit is $4\frac{1}{2}$ per cent. on cost in Russia, and $4\frac{1}{2}$ in Germany. Goods tariff is 50 per cent. higher than in Germany, which is a serious obstacle to internal trade, and hence we find that the haulage is hardly one-third of what is done on the railways of Germany. There are 14,900 miles of State railways, and the Government holds shares in the companies' lines to the amount of one-third of their capital.

Canals.—Navigable rivers and canals unite all the great cities: the principal system is that of which the Volga is the main artery. Vessels 200 feet long can traverse the whole length from the Caspian Sea to Archangel, 2500 miles, or to

St. Petersburg, and this traffic on internal waters occupies 1500 steamers and 61,000 canal boats, with crews numbering altogether 300,000 men. Navigation is open during eight months, the canals being frozen during the other four months.

Banks.—The Imperial Bank, founded in 1859, has a monopoly in the issue of dishonest money, or inconvertible notes, which has been for more than a century the curse of Russia. In 1843 the paper-money fell so low that the Czar called it in, giving one new note for three old ones: since then the issue has been multiplied six-fold, and the currency is now at 40 per cent. discount. While the gold rouble is worth 38 pence, the paper one fluctuates about 24 pence. The amount of issue and the value of the rouble note at various dates have been as follows:—

Year.	Million Roubles, Issue.	Millions £ Value.		Rouble Pence.
		Nominal.	Real.	
1823	605	96	25	10
1844	180	29	27	35
1870	720	114	84	28
1895	1,396	221	140	24

In 1878 there were 30 large, and 347 small, joint-stock banks, whose current discounts made up an aggregate of 82 millions sterling. The banking-power of the empire is apparently about 160 millions sterling.

EARNINGS AND WEALTH

The earnings of the Russian people at various dates have been approximately as follows:—

		1824.	1864.	1894.
Agricultural	114	198	324	
Manufacturing	40	88	190	
Mines, forests, &c. . . .	15	30	54	
Trade	30	56	103	
Transport	31	58	108	
House-rent. . . .	20	29	47	
Domestics	13	20	31	
Public service	7	35	56	
Professions. . . .	27	51	91	
Total	297	565	1,004	

The earnings in 1894 averaged £10 per inhabitant, or a little over 6 pence a day, a condition of extreme poverty.

Wealth.—The wealth of the nation has more than doubled since 1864, the largest item of increase being, of course, that of land, viz.:—

	Millions £ Sterling.		
	1864.	1894.	Increase.
Land	670	2,113	1,443
Cattle, &c.	360	597	237
Railways	20	349	329
Factories	59	127	68
Houses	550	892	342
Furniture	275	446	171
Merchandise	280	515	235
Bullion	40	101	61
Sundries	564	1,285	721
Total	<hr/> 2,818	<hr/> 6,425	<hr/> 3,607

Land.—The ordinary price before the Crimean War was, according to Buchanan, £1 English per cultivated acre, but in 1879 Strebinski found it was 60 shillings for cultivated, and 6 shillings for forest. A report published by the Imperial Bank in 1888 shows that during three preceding years the average price was (in gold money) 65 shillings per acre for cultivated, and 8 shillings for forest, lands. At these prices, excluding 363 million acres of desert, the landed value would be as follows:—

	Million Acres.	Millions £.
Improved	589	1,914
Forest	498	199
Total	<hr/> 1,087	<hr/> 2,113

The total agricultural capital between land, cattle, and sundries, sums up only 2710 millions sterling, or £70 per agricultural hand, as compared with £270 in Germany.

Houses.—Buschen valued urban house property in 1864 at 270 millions sterling, and Strebinski the farm-houses at 288 millions in 1879. Since 1864 urban population has risen 45, internal trade 77 per cent., and the Imperial Bank statement shows that rural property has had an increase of 60 per cent.

since Strebinski's report. We may, therefore, estimate a rise of 60 per cent. both in urban and rural house-property, and then the total value in 1894 would be approximately thus:—

		MILLIONS £.	£ per Inhab.
City houses		432	42
Rural , , , , .		460	5
Total		892	9

Summary.—Dividing the total wealth among the population the average is only £61 per inhabitant, against £156 in Germany and £252 in France: in fact, Russia may be described as a country of princes and peasants, the social condition of the rural masses being similar to what Arthur Young saw in France before the French Revolution.

FINANCE

Revenue has multiplied six-fold in half a century, being now 112 millions sterling, as compared with 17 millions in 1840. If we compare the budgets of 1867 and 1894 we find as follows:—

	Revenue, Millions £.		Expenditure, Millions £.	
	1867.	1895.	1867.	1895.
Customs	4	15	Debt	12 28
Excise	21	37	Army and navy	22 33
Sundries	45	60	Government	36 51
Total	70	112	Total	70 112

The Government is very careful that income and expenditure balance each other every year, but this applies only to ordinary expenditure, large sums being spent outside the budget unprovided for. State railways and other Crown properties produce 37 millions sterling, so that the amount raised by taxation is only 75 millions yearly. The Minister, however, includes among other Crown estate incomes the annual land-tax of 9 millions sterling from the emancipated

serfs, in payment of their farm-lots, and if we count this among taxes it will make the taxation 84 millions. There are, moreover, local taxes amounting to 11 millions, bringing up the total taxation to 95 millions sterling, or 9½ per cent. of national earnings.

Debt. — Exclusive of expenditure in the construction of railways there have been continuous deficits since 1840, summing up 345 millions sterling, which have been met partly by loans, partly by issue of dishonest money or inconvertible notes, viz., 241 millions by loans, 104 millions by spurious paper money. In 1894 the Government converted several loans of higher interest into 4 per cent. stock, besides raising new loans to purchase railway lines and to meet other requirements. The total debt in January 1895 was as follows :—

Debt.	Millions & Sterling.		
	Gold.	Currency.	Total.
Ordinary Railway	: . . . : 160	845	495
	: . . . : 166	42	208
Total	. . . . : 816	887	708

The currency debt includes 104 millions sterling of uncovered bank-notes, the issue amounting to 1396 million roubles and the specie reserve to 360 millions, leaving 1036 millions uncovered. Deducting the value of State railways, the real debt of Russia is 495 millions sterling, which is only 7½ per cent. of the wealth of the empire.

VII

AUSTRIA-HUNGARY

THE Austro-Hungarian monarchy comprises a number of States, peopled by so many nations that the Emperor Francis Joseph is said to speak a dozen languages in making the round of his dominions. The States that at present compose the empire have increased 50 per cent. in population in sixty years, viz. :—

	1830.	1890.	Increase, per Cent.
Austria	11,760,000	18,080,000	54
Bohemia	3,680,000	5,840,000	59
Hungary	12,060,000	17,460,000	45
<hr/>			
Total	27,500,000	41,380,000	50

The greatest increase has been in Bohemia. The empire has an area of 244,000 square miles, and the number of inhabitants per square mile has been as follows :—

Year.	Austria.	Bohemia.	Hungary.	Monarchy.
1830	121	184	95	112
1890	185	292	188	169

Bohemia being densely populated the people are in a manner compelled to emigrate : in fact 40 per cent. of the emigration from the empire is from that province, that is three times as much as its ratio of population. On the other hand, the efflux from Hungary yearly is less than 1 per thousand of the population, because the Hungarians have the necessaries of life in abundance. Official returns show that between 1850 and 1892 no fewer than 1,443,000 persons emigrated from Austria-Hungary, an average of 35,000 yearly. The American census of

1890 showed 304,000 Austrian subjects, of whom two-fifths were Austrians, two-fifths Bohemians, and one-fifth Hungarians. There has been, moreover, in the last half-century a great influx of rural population into cities and towns. The three principal cities, for example, have more than quadrupled their aggregate population since 1830, viz. :—

Year.	Vienna.	Buda-Pesth.	Prague.	Total.
1830 . . .	280,000	70,000	85,000	435,000
1890 . . .	1,370,000	510,000	180,000	2,060,000

Here we find the increase of the three principal cities has been 380 per cent., while that of the rest of the empire has been only 45 per cent. As regards the distribution of sexes we find the excess of females is more marked in Bohemia than elsewhere; the number to 1 thousand males is 1014 in Hungary, 1035 in Austria, and 1071 in Bohemia.

The latest census of occupations for Austria, including Bohemia, is that of 1890, for Hungary the same year, according to which we find as follows :—

	Austria.	Hungary.	Empire.
Agriculture . . .	8,470,000	4,470,000	12,940,000
Manufactures . . .	2,880,000	1,740,000	4,620,000
Commerce . . .	810,000	210,000	1,020,000
Professions, &c. . .	1,100,000	970,000	2,070,000
Total . . .	13,260,000	7,890,000	20,650,000

The working-power of the Austrian empire at various dates was :—

Year.	Millions of Foot-tons Daily.			Foot-tons per Inhabitant.	
	Hand.	Horse.	Steam.	Total.	Inhabitant.
1840 . . .	2,750	8,800	120	11,670	350
1870 . . .	8,080	10,800	3,200	16,080	450
1893 . . .	8,580	10,700	9,560	28,790	560

The ratio of energy per inhabitant is not high, and gives reason to desire much improvement in the direction of steam. France, with a smaller population, has double Austria's steam-power; this has, nevertheless, almost trebled in the last twenty-three years, viz. :—

Horse-power of Steam.

Year.	Fixed.	Locomotives.	Steamboats.	Total
1870 . .	190,000	560,000	50,000	800,000
1894 . .	480,000	1,780,000	130,000	2,390,000

The horse-power of steam is 55 per thousand inhabitants, against 150 per thousand in Germany.

AGRICULTURE

Fifty years ago the Austrian empire was in a semi-barbarous condition. There were but three classes: princes, peasants, and pedlars. The princes or nobles held immense estates in Bohemia, Moravia, and Hungary, some having more than 10,000 serfs, and living in a style of such magnificence that they were floundering in debt. There were no roads. Land-owners spent their lives in hunting boars and other wild animals. The serfs had to give 104 days of corvée labour gratis in the year to their master, besides one-ninth of the crops and increase of cattle. The revolution of 1848 brought a healthy change: the feudal system was abolished; one-half of the estate of each nobleman was broken up into farm-lots for the peasants, without other obligation than an annual charge of $2\frac{1}{2}$ per cent. on the amount paid by the Crown in compensation to the nobles. This gave such an impulse to rural pursuits that in less than twenty years land doubled in price, and the peasants became industrious and thrifty. The cultivated area has risen 60 per cent. since Becher's survey in 1836, showing thus:—

Year.	Acre.		
	Cultivated.	Uncultivated.	Total
1836 . .	32,500,000	110,000,000	142,500,000
1895 . .	52,300,000	97,200,000	149,500,000

The cultivated area is larger in Hungary than in Austria, official returns showing as follows:—

	Acres.		
	Austria.	Hungary.	Total.
Crops .	25,100,000	27,200,000	52,300,000
Pasture .	14,200,000	18,900,000	33,100,000
Productive .	39,300,000	46,100,000	85,400,000
Forest .	24,200,000	18,800,000	43,000,000
Mountain .	6,400,000	14,700,000	21,100,000
Total .	69,900,000	79,600,000	149,500,000

Becher found the total grain-crop of the empire in 1836 to be 9,100,000 tons, whereas the average for the last three years has been 19½ million tons. Hungary has a larger area under grain than Austria, and the crops also are heavier, averaging 20 bushels to the acre, against 18 in Austria. There is always a surplus of grain and meat in the empire, net exports averaging 540,000 tons of the former and 50,000 of the latter yearly. The amount of food raised may be reduced to a grain denominator as follows:—

	Austria.	Hungary.	Total.	Equiv. in Grain.
Grain, tons .	7,900,000	11,600,000	19,500,000	19,500,000
Potatoes, „ .	6,500,000	3,500,000	10,000,000	3,380,000
Meat, „ .	600,000	610,000	1,210,000	9,680,000
Wine, gallons .	82,000,000	30,000,000	112,000,000	1,120,000
Total .				83,630,000

The value of all farm products was estimated by Becher at 205 millions sterling in 1840, and at present it is approximately 319 millions, viz.:—

	Millions £ Sterling.				
	Grain.	Sundries.	Meat.	Dairy, &c.	Total.
Austria .	48	54	26	37	165
Hungary .	72	36	25	21	154
Empire .	120	90	51	58	319

The gross product, if distributed over the productive area, 85,400,000 acres, would give an average of 75 shillings per acre, as compared with 96 shillings in Germany and 19 in Russia. The emancipation of the serfs in 1849 has been

followed by an increase of 1100 millions sterling in agricultural wealth, viz. :—

Year.	Millions £ Sterling.				Total
	Land.	Cattle.	Sundries.		
1840 . . .	548	50	59		652
1894 . . .	1,478	161	163		1,797

The agricultural capital in 1894 was approximately as follows :—

	Millions £ Sterling.			Total
	Austria.	Hungary.		
Land	796	677		1,473
Cattle	88	73		161
Sundries	88	75		163
Total	972	825		1,797

Land is still so cheap that the amount of agricultural capital is relatively small—that is to say, the annual value of farm products is much higher in ratio than in most countries; it is nearly 18 per cent., as compared with 16½ per cent. in Germany. The relation between capital and products in the two great divisions of the monarchy are shown thus :—

	Millions £ Sterling.		Ratio per Cent.
	Capital.	Product.	
Austria	972	165	17
Hungary	825	154	18½
Total	1,797	319	17½

One-third of the Austrian empire is held by the Crown, the clergy, or other corporations, one-third by the nobles, and one-third by the emancipated serfs or peasantry, as appears from the following table, in English acres :—

	Acres.			
	Crown, &c.	Nobles.	Peasants.	Total.
Austria .	23,800,000	20,600,000	25,200,000	69,600,000
Hungary .	34,000,000	20,400,000	25,800,000	79,700,000
Empire .	57,800,000	41,000,000	50,500,000	149,300,000

The average size of a peasant's property is 18 acres. Noblemen's estates average 8000 acres in Galicia, 20,000 in

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Bohemia, 24,000 in Hungary. From whatever cause sheep-farming has declined; there are now barely 14 million sheep, as compared with 30 millions in 1840. On the other hand, horned cattle have increased 40 per cent. Some of the sheep-farms are the highest in the world, those in Styria being often 9000 feet over sea-level. On the whole the condition of the agricultural classes is fairly prosperous: the peasant owner pays no rent, his taxes are light, and the average product per hand is as follows:—

		Millions £.	Hands.	£ per Hand.
Austria	: . . . :	165	8,470,000	20
Hungary	: . . . :	154	4,470,000	34
Empire	. . . . .	319	12,940,000	24

The agricultural population is relatively very large, being 59 per cent., as compared with 40 in Germany and 42 in France.

FORESTS AND FISHERIES

More than one-fourth of the monarchy is under timber, a considerable portion of the forests belonging to the Crown, the Church, or Municipal bodies. The ordinary cutting is more than half a ton per acre yearly, two-thirds firewood, one-third timber, the total value being approximately 18 millions sterling, a little more than 8 shillings per acre. About one-fourth of the timber is exported, viz., 2,200,000 tons, value £5,000,000. The number of wood-cutters is unknown, but will hardly fall short of 300,000. There are no returns as to fisheries, which are of trifling importance.

MANUFACTURES

When Becher made his survey in 1834 he found 11,060 factories and 2,330,000 operatives and artisans, whose products he valued at 142 millions sterling. At present the value reaches 328 millions.

Textiles.—The output of these goods at various dates was approximately as follows:—

		<u>Millions £ Sterling.</u>		
		1834.	1860.	1894.
Cottons .	. . . . .	8	7	18
Woollens .	. . . . .	4	7	15
Linens, &c.	. . . . .	5	9	18
Silks .	. . . . .	8	5	5
Total .	. . . . .	15	28	56

Cottons.—In the earlier part of the century this industry was of minor importance, the consumption of cotton and yarn in 1830 hardly reaching 5000 tons, but it has now taken the highest place among textile industries. The mills are mostly in Upper Austria and Bohemia, counting 96,000 operatives and 2,400,000 spindles, and consuming 140,000 tons of cotton. The production is just sufficient for home consumption, the value whereof averages 8 shillings per inhabitant, against 11 in Germany.

Woollens.—Bohemia and Moravia were famous for their cloths more than a hundred years ago, but such was the stagnation of trade under the old feudal system, down to 1848, that the mills did not consume the quantity of wool grown, much being exported. It was not until 1875 that the imports of wool exceeded exports, and such is now the activity of this branch of manufacture that the ordinary consumption is 55,000 tons, or double the weight of clip, the mills depending for six months in the year on imported wool. Home consumption averages 6 shillings per inhabitant, against 16 in Germany.

Linens.—As far back as the fourteenth century Bohemian linen was known in all the world's markets, but the industry suffered during the wars of Bonaparte, and only began to revive after Waterloo. The mills in 1824 turned out 92 million yards of linen, valued at £3,600,000, besides a quantity of hempen goods. A new era opened about 1850, with the breaking up of large estates and the introduction of railways, the area under flax doubling in a few years. In 1892 the

mills consumed 180,000 tons of flax, hemp, and jute, and the output is valued by Zehden at 16 millions sterling.

Silks.—In 1834 the province of Tyrol produced silken goods to the value of 3 millions sterling. The mills in all the monarchy at present consume 1500 tons of raw silk, one-tenth native grown, nine-tenths imported, the chief supply being obtained from Lombardy. The value of goods manufactured is about £4,500,000, one-tenth being exported.

Hardware.—The scarcity and dearness of iron in the early part of the century acted as a serious check upon agriculture and all industries. In 1830 there were some factories in Styria for making nails and arms, but it was not till thirty years later that the manufacture of hardware rose to any importance. Official reports show the production and consumption of iron as follows:—

Year.	Tons of Iron.		
	Produced.	Imported.	Consumed.
1830	80,000	20,000	100,000
1860 : : : :	310,000	20,000	330,000
1893	930,000	60,000	990,000

Three-fourths of the pig-iron are made in Austria, one-fourth in Hungary. Steyer, the Sheffield of the empire, is famous for its cutlery. The total value of iron and steel manufactures is approximately 15 millions sterling, that of other metallic wares 4 millions. The consumption of lead is 70,000, of copper 11,000 tons; of the latter three-fourths are imported.

Leather.—The supply of native hides and leather has never been sufficient, and at present one-sixth is imported, the consumption reaching 80,000 tons, and the value of goods manufactured about 40 millions sterling; the consumption is equal to 18 shillings per inhabitant, against 23 shillings in Germany.

Porcelain.—The output of Bohemian glass and porcelain in 1834 was £2,600,000; at present it may be roughly estimated at 8 millions sterling, exports amounting to 2 millions.

Sugar.—In 1850 the mills turned out 10,000 tons of beet-sugar, and since 1891 the average output has been 700,000 tons, of which two-thirds are exported, home consumption averaging only 13 lbs. per inhabitant.

Liquor.—There are 4100 breweries and distilleries, which produce 330 million gallons of beer and 30 million of spirits, together worth 21 millions sterling.

Summary.—The approximate value of manufactures at various dates was as follows:—

	Millions £ Sterling.		
	1884.	1890.	1894.
Textiles	15	28	56
Hardware	5	10	19
Leather	25	32	40
Food	50	65	81
Clothing	25	33	39
Houses and furniture	14	18	27
Sundries	38	46	66
Total	167	232	328

An official report for 1890 showed 10,750 factories, with steam-motors representing 480,000 horse-power, and 846,000 hands: there were also 3,034,000 artisans. The value of manufactures gives an average of £84 per hand.

MINERALS

Austria, as Zehden observes, is one of the countries richest in minerals, but the product is small because the working is expensive, coal and the metallic minerals not being found within convenient distance of each other. The output has been as follows:—

Year.	Tons Raised.				Value, £.
	Coal.	Ores.	Total.		
1840 . . .	400,000	190,000	590,000		300,000
1860 . . .	3,500,000	510,000	4,010,000		1,500,000
1893 . . .	30,400,000	3,700,000	34,100,000		8,800,000

About two-thirds of the coal is lignite, a cheap fuel found in Bohemia and Hungary, of which 8 million tons are

annually exported by the Elbe. On the other hand Austria imports 4 million tons of foreign coal. Thus the total consumption is 26 million tons. Iron mines are worked in Styria, lead mines in Carinthia and Bohemia. About 2 tons of gold are extracted yearly from Hungarian ores, and 50 tons of silver from Bohemian. The petroleum wells of Galicia yield 200 million gallons, valued at £800,000. Altogether the mines employ 140,000 persons, and the annual output is 10 millions sterling.

COMMERCE

The foreign trade of the empire has grown eight-fold since 1831, showing as follows :—

Year.	Millions £ Sterling.		
	Imports.	Exports.	Total
1831	7	5	15
1894	58	66	124

Austria has so little coast-line and so few seaports that most of her foreign trade is done not by shipping but by railway. The returns for four years ending 1894 give the following averages :—

	Millions £ Sterling.			
	Imports from.	Exports to.	Total.	Ratio.
Germany	20	35	55	46·3
Great Britain	5	5	10	8·4
Italy	4	4	8	6·7
Other Countries	25	21	46	38·6
Total	54	65	119	100·0

Trade relations with Germany are nearly equal to those with all other nations collectively. The foreign trade of Austria is much greater than that of Russia, although the population of the latter empire is more than double.

Shipping.—The Austrian Lloyd's Co., specially intended to trade in the Levant, was formed in 1833, the Danube Steam-boat Co. in 1850 : the latter owns 186 steamers and 700 iron

barques, which during certain seasons ply between Ratisbon and Galatz, 1500 miles. The merchant-shipping of the empire is insignificant; between sea-going and internal it hardly reaches 250,000 tons register, with 640,000 carrying-power.

Internal Trade.—This is greatly facilitated by 18,000 miles of railway, 99,000 of excellent carriage-roads, and 7200 of inland navigation, in all 124,000 miles. It amounted approximately at various dates as follows:—

	Millions £ Sterling.		
	1850.	1860.	1894.
Agriculture	186	270	319
Manufactures	167	232	328
Minerals and forestry	8	13	28
Imports	7	21	58
Total	868	536	738

The shares that corresponded to Austria and Hungary in 1894 were approximately:—

	Millions £ Sterling.		
	Austria.	Hungary.	Total.
Agriculture	165	154	319
Manufactures	180	148	328
Minerals, &c.	17	11	28
Imports	34	24	58
Total	396	337	733

Railways.—A horse railway was opened from Linz to Budweis in 1829, but the first for locomotives in 1836. The active construction of railways began after the emancipation of the serfs, since which time 17,000 miles have been opened, being an average of 400 miles of new line yearly. The length open in 1850 and at present is shown thus:—

Year.	Miles Open.		
	Austria.	Hungary.	Total.
1850	820	140	960
1895	10,100	8,220	18,320

There are 12,270 miles of State railways, 6050 belonging to companies; the average cost per mile all round was £20,300, having been £21,500 in Austria, and £18,700 in Hungary.

The traffic returns per mile of the railways of the empire compare with those of Russia and Germany thus:—

	Receipts, £.	Expenses, £.	Profit, £.
Austrian	1,510	860	650
Russian	1,620	990	630
German	2,564	1,864	900

The Austrian returns are nearly the same as the Russian, and a long way behind the German. Net profit is equal to 3½ per cent. on capital. Goods traffic is equivalent to 55 million tons carried 100 miles.

Banks.—The Imperial Bank, founded at Vienna in 1861, has a capital of 9 millions sterling, and possesses sole right of issue. There are 224 other joint-stock banks. In 1887 the banking-power of the empire was 147 millions sterling, or half that of France.

EARNINGS AND WEALTH

The earnings of the Austro-Hungarian people at various dates were approximately as follows:—

	Millions £ Sterling.		
	1884.	1880.	1894.
Agricultural	112	162	192
Manufacturing	88	116	164
Mining and forests	8	13	28
Trade	87	54	78
Transport	89	56	76
House-rent	18	20	37
Domestics	9	18	25
Public service	8	18	48
Professions	81	45	64
Total	340	497	707

The above earnings for 1894 give an average of nearly £17 per inhabitant; Neumann Spallart's estimate in 1880 having given £16 per head. The shares that correspond to the two portions of the monarchy are as follows:—

	Millions & Sterling.		
	Austria.	Hungary.	Total.
Agricultural	99	93	192
Manufacturing	90	74	164
Mining and forests	17	11	28
Trade	39	34	73
Transport	41	35	76
House-rent	28	9	37
Domestics	19	6	25
Public service	28	20	48
Professions	36	28	64
Total	397	310	707

The average earnings to population are 14 shillings per head higher in Hungary than in Austria.

Wealth.—The components of wealth in 1895 were approximately as follows:—

	Millions & Sterling.		
	Austria.	Hungary.	Total.
Land	796	677	1,473
Cattle, &c.	176	148	324
Houses	460	150	610
Furniture	230	75	305
Railways	217	154	371
Factories	60	49	109
Merchandise	198	169	367
Bullion	28	23	51
Sundries	541	361	902
Total	2,706	1,806	4,512

Professor Sternegg in 1892 valued Austria (without Hungary) at 2500 millions sterling. Beer's valuation in 1880 for the whole empire was 3330 millions sterling, from which it would appear that the increase of wealth in the last fifteen years has averaged 79 millions, or about 40 shillings per inhabitant, as compared with 68 shillings in France.

Land.—The value of land in 1893 was approximately as follows:—

	Acres (000's omitted).			Millions & Sterling.		
	Austria.	Hungary.	Total.	Austria.	Hungary.	Total.
Arable .	25,100	27,200	52,300	527	436	963
Pasture .	14,200	18,900	33,100	149	151	300
Forest .	22,800	22,600	45,400	120	90	210
Total	62,100	68,700	130,800	796	677	1,473

In 1892 Professor Fellner valued the land of Hungary at 650 millions sterling. The average price of arable land per acre is £21 in Austria and only £16 in Hungary, although the Hungarian land is of better quality; the difference, perhaps, arises from the fact that the population is denser in Austria, viz., 56 per square mile, against 45 in Hungary.

Houses.—In 1892 Schiff valued the houses of Austria at 320, Fellner those of Hungary at 110, millions sterling, but these estimates were evidently much too low. The house-tax of Austria in 1892 was supposed to be 10 per cent. on the real rental, being 15 per cent. on the nominal assessment: it amounted to £2,760,000, representing therefore a rental of £27,600,000 and a capital value of £460,000,000 sterling. The valuation of house-property in Vienna in 1886 was £88,000,000, say £80 per inhabitant. When Fellner made his estimate in 1892 the assessments of houses in Hungary were equal to about one-third of the amount in Austria; the value would, therefore, be about £150,000,000. This would make the total for the monarchy 610 millions sterling, or £15 per inhabitant, as compared with £30 in Germany.

FINANCE

Revenue has increased six-fold since 1840, the amount in millions sterling showing as follows:—

Year.	Revenue.	Debt.
1840 : : : : .	16	125
1895 : : : : .	97	543

Besides the special budgets for Austria and Hungary there is one for the joint monarchy. The special in 1895 together made up £92,500,000, that of the united monarchy £12,300,000, but the latter included contributions from the two States provided out of their budgets, and amounting to £8,300,000, so that the total of revenues sums up £96,500,000:—

	Austria. £	Hungary. £	Monarchy. £
Railways . .	8,100,000	6,800,000	14,900,000
Crown estates . .	6,400,000	6,000,000	12,400,000
Taxes . .	39,200,000	26,000,000	65,200,000
Customs . .	2,800,000	1,700,000	4,000,000
Total . .	56,000,000	40,500,000	96,500,000

The last item in the above table is the General Customs, an imperial tax, which averages 2 shillings per inhabitant. The expenditure comprises 24 millions for service of debt, 16 for the army, and 56 for civil service and other internal expenses.

In 1892 the provincial taxes of Austria (without Hungary) amounted to £5,200,000, and the municipal taxes of forty-nine cities to £4,600,000, making altogether about 10 millions sterling. The local taxation in Hungary is less than in Austria, and may reach 5 millions sterling. Thus the total revenue raised by taxation, national and local, makes up 84 millions sterling, which is equal to 12 per cent. of national earnings, the incidence of taxation being 6 shillings less in Hungary than in Austria, per head of the population.

Debt.—The total debt of the empire, funded and unfunded, consists of 1210 millions of gold florins (121 millions sterling), and 5210 millions in silver or paper (435 millions sterling), distributed thus:—

	Millions of Florins.				
	General.	Austrian.	Hungarian.	Total.	Millions £.
Gold . .	500	...	710	1,210	121
Silver . .	400	1,000	1,200	2,600	217
Paper . .	2,170	270	170	2,610	217
Total . .	3,070	1,270	2,080	6,420	555

In apportioning the general debt it was agreed to consider 70 per cent. of it Austrian, 30 per cent. Hungarian, and in this way the total debt of Austria comes to be 291, that of Hungary 264, millions sterling. If we deduct the value of State railways, the figures are reduced to 184 and 140 millions respectively, or £8 per inhabitant in both countries. The total net debt of 324 millions sterling is equal to $7\frac{1}{2}$ per cent. of the wealth of the monarchy.

VIII

ITALY

POPULATION has increased 45 per cent. since 1830, the following table preserving the ancient denominations for sake of comparison :—

State.	Population.		Per Sq. Mile.	
	1830.	1833.	1830.	1833.
Piedmont . . .	3,750,000	4,230,000	180	303
Papal States . . .	2,710,000	3,790,000	150	210
Naples . . .	7,490,000	11,470,000	180	285
Lomb. Venetia . .	4,280,000	6,980,000	225	367
Duchies . . .	2,770,000	4,070,000	126	185
Total . . .	21,000,000	30,540,000	175	270

The increase of population has been too rapid for the resources of the kingdom, being now 50 per cent. more to the square mile than in France. The productive area is only 53 million acres, barely sufficient to raise food for 27 million souls, the population being therefore 15 per cent. in excess of what the country can conveniently carry. Hence there has been for many years a strong current of emigration, Carpi and other authorities showing thus :—

Period.	To U. States.	S. America.	All Countries.	Per Annum.
1861-80 .	59,000	610,000	1,829,000	91,500
1881-92 .	349,000	910,000	1,904,000	158,700
32 years .	408,000	1,520,000	3,733,000	117,000

At present the annual emigration is just half the natural increase from surplus of births over deaths. In this country, as elsewhere, urban population has risen much faster than rural, the aggregate of four principal cities showing an increase

of 140 per cent., while the rest of Italy has increased only 40 per cent., since 1830, viz. :—

Year.	Naples.	Rome.	Milan.	Turin.
1830 .	354,000	128,000	125,000	114,000
1892 .	580,000	440,000	480,000	330,000

While the number of foreign residents in Italy is only 60,000, that of Italians residing abroad is nearly 2 millions, namely 1,010,000 in South America, 286,000 in the United States, and 620,000 in the East and other countries. The census of 1881 gave the occupations (see Appendix) of all persons over 9 years of age. If we consider only persons between 15 and 60, and allow for increase of population, the numbers employed in 1895 would be as follows :—

	Men.	Women.	Total.	Ratio.
Agriculture .	4,850,000	2,490,000	6,840,000	52·6
Manufactures .	1,880,000	1,550,000	3,430,000	26·4
Commerce .	510,000	110,000	620,000	4·8
Professions, &c.	1,270,000	900,000	2,170,000	16·2
Total .	8,010,000	5,050,000	13,060,000	100·0

The working-power of the nation has almost doubled since 1870, viz. :—

Year.	Millions of Foot-Tons Daily.				Foot-Tons per Inhab.
	Hand.	Horse.	Steam.	Total.	
1870 .	2,410	3,060	1,320	6,790	260
1893 .	2,750	3,800	5,520	12,080	400

This rapid increase is chiefly owing to the development of steam-power, viz. :—

Steam Horse-Power.

Year.	Fixed.	Locomotives.		Total.
		Locomotives.	Steamboats.	
1870 .	45,000	250,000	35,000	330,000
1893 .	160,000	1,000,000	210,000	1,370,000

The steam-power is little more than one-fourth of that of France, although the population is as four to five.

AGRICULTURE

Italians, except in some of the southern provinces, are the most laborious people in Europe, with special aptitude for tillage and gardening, but agriculture is by no means prosperous. One-third of the kingdom consists of forest or waste lands, improved machinery is little known, and taxes in every form oppress the husbandman. There has been, nevertheless, remarkable progress in the last half-century, as may be seen on comparing the official returns for 1894 with Schnabel's estimate for 1840, as follows :—

Year.	Acres.				Total.
	Vineyards.	Grain, &c.	Forest, &c.		
1840 . .	3,900,000	17,600,000	52,000,000		73,500,000
1894 . .	8,520,000	29,680,000	32,590,000		70,790,000

In fifty-two years the peasantry have reclaimed 18 million acres, and doubled the cultivated area. The returns for 1892, according to the old denominations, showed thus :—

State.	Acres.				Total.
	Grain.	Wine.	Sundries.		
Piedmont . .	1,660,000	750,000	1,580,000		3,990,000
Papal States . .	3,290,000	2,070,000	2,100,000		7,460,000
Naples . .	7,300,000	2,340,000	4,390,000		14,030,000
Lomb. Venetia . .	3,780,000	1,550,000	2,380,000		7,690,000
Duchies . .	2,660,000	1,980,000	2,010,000		6,600,000
Total . .	18,690,000	8,640,000	12,440,000		39,770,000

The grain crops are light, seldom exceeding 13 bushels per acre, and for more than thirty years Italy has had to import cereals: the deficit in this respect increases with population, and whereas the imports twenty years ago were equal to eight days' supply, Italy has now to subsist on imported grain forty-two days in the year. The following table shows the total average grain crop, from which one-eighth has to be reserved for seed, and the quantity imported yearly in tons :—

Period.	Crop.	Imports.	Consumption.
1868-77 . . .	5,400,000	120,000	5,520,000
1891-93 . . .	6,100,000	710,000	6,810,000

The annual production of meat is about 390,000 tons, of which 20,000 are exported, the balance allowing a supply of only 27 lbs. per inhabitant, the lowest ratio in Europe: this is insufficient for the proper maintenance of the people, and partly accounts for the high death-rate (26·5), which is 38 per cent. more than in the United Kingdom. Dr. De Renzi states that 4 per cent. of the people die of impoverishment of the blood, for want of meat. All the food raised in Italy (except fruit) being reduced to a grain denominator shows thus:—

	Quantity.	Equiv. in Grain.
Grain, tons	6,100,000	6,100,000
Potatoes, "	750,000	250,000
Rice, "	480,000	600,000
Meat, "	890,000	8,120,000
Wine, gallons	726,000,000	7,260,000
Total		17,830,000

This is equivalent to little more than half a ton per inhabitant, whereas the ratio in France is over a ton; it demonstrates that the agricultural resources are utterly inadequate to support a population of 31 millions, and that emigration ought to be encouraged and facilitated. An official valuation of farm products in the years 1891-92-93 showed an average of 172 millions sterling, but appears to have been too low, hay being omitted, and fruits and vegetables under-estimated (see Appendix). The value approximately in 1870, and in 1893, was as follows:—

Year.	<u>Millions £ Sterling.</u>				
	Grain.	Wine.	Sundries.	Pastoral.	Total.
1870	56	81	51	34	172
1893	53	84	54	63	204

The product compared with the productive area gives an average of 77 shillings per acre, against 92 in France and 75 in Austria. There is apparently a great waste of labour for want of machinery, the product being only £30 per hand

employed, as compared with £59 in France. Small farms are the rule in Northern Italy, whereas in Central and Southern the estates average 100 acres. In 1870 the proprietors and area showed thus:—

	Proprietors.	Acres.	Average.
North . . .	909,000	22,500,000	25
Papal States . . .	80,000	10,800,000	136
Naples . . .	276,000	24,900,000	90
Total . . .	1,265,000	58,200,000	46

Since 1870 many large estates have been broken up, and in 1882 the number of landowners had risen to 1,610,000, with an average of 36 acres each. Agricultural capital seems to have trebled since 1840, showing approximately as follows:—

Year.	Millions & Sterling.			
	Land.	Cattle.	Sundries.	Total.
1840 . . .	877	80	41	448
1890 . . .	1,180	92	127	1,399

If the capital were divided among the number of agricultural hands it would give an average of £165 each, as compared with £430 in France. The sum of farm products in 1893 was nearly 15 per cent. on the above capital.

FORESTS AND FISHERIES

The area under timber is a little over 10 million acres, or one-seventh of the kingdom. The cutting is about 9 million tons, of which 5 millions are firewood, the rest timber, the supply of the latter being so far short of requirements that Italy imports 1 million tons yearly. Forest products are valued officially at £3,500,000 per annum, say 7 shillings an acre, as compared with 8 shillings in Germany.

There are 70,000 men employed in the fisheries, who take fish to the value of £700,000 per annum. Italy, moreover, imports 50,000 tons of fish, valued at £1,500,000; her consumption is about 100,000 tons, an average of 7 lbs. per inhabitant.

MANUFACTURES

Textile manufactures show great progress, the weight of fibre consumed having quadrupled in thirty-two years, as shown thus :—

Year.	Tons of Fibre.			
	Cotton.	Wool.	Flax, &c.	Total.
1862 . .	12,000	14,000	20,000	46,000
1894 . .	105,000	22,000	65,000	192,000

Cottons.—The mills count 82,000 workmen, who turn out goods to the value of 13 millions sterling, but this is not sufficient, for Italy has to import cotton fabrics to the value of £900,000 yearly.

Woolens.—This industry has been almost stationary for the last fifteen years. The wool consumed is half native, half imported, and the output is worth 6 millions sterling. Here again the supply is short of requirements, and goods to the value of £1,200,000 are imported.

Silks.—This industry is one of primary importance, the factories counting more than 1½ million spindles. The quantity of silk spun yearly is about 4000 tons, most of which is exported to France. Between the value of spun silk exported and that of silk goods made for home use this industry stands for 9 millions sterling.

Flax.—The mills consume 65,000 tons of flax and hemp, or about two-thirds of the crop, the rest being exported : output about 8 millions sterling.

Hardware.—The consumption of iron and steel hardly reaches 200,000 tons, one-third imported, and of lead 20,000 tons, the total output of hardware manufactures not exceeding 4 millions sterling.

Leather.—About 32,000 tons are consumed, one-third made from imported hides ; the value of goods made is about 16 millions, an average of only 10 shillings per inhabitant, against 18 shillings in France.

Summary.—The total value at various dates is shown approximately thus :—

		Millions £ Sterling.		
		1850.	1860.	1894.
Textiles	.	6	20	37
Hardware	.	1	2	4
Leather	.	8	10	16
Food	.	33	44	52
Clothing	.	14	18	23
Houses and furniture	.	13	17	20
Sundries	.	19	28	38
Total	.	94	139	190

MINERALS

Between mines and quarries there are 67,000 hands, who turn out a total value of 3 millions sterling, viz. :—

	Tons.	Value, £.	Hands.
Sulphur	370,000	1,100,000	36,000
Ores	830,000	1,100,000	11,000
Marble	260,000	1,000,000	20,000
Total	1,460,000	3,200,000	67,000

There are 610 sulphur mines working in Sicily, but the industry is a poor one, the product per miner not exceeding £30 a year. The want of coal-fields is a great drawback: Italy has to import 4 million tons yearly, of which quantity the factories consume two-thirds, railways and steamboats the rest.

COMMERCE

Foreign trade rose considerably after the expulsion of the Austrians and Grand Dukes, and is now more than double what it was forty years ago, showing as follows :—

Year.	Millions £ Sterling.		
	Imports.	Exports.	Total.
1850	23	15	38
1894	44	41	85

The returns for five years, to December 1892, give the following averages :—

	Millions £ Sterling.			
	Imports from.	Exports to.	Total.	Ratio.
Great Britain . . .	11	5	16	17·6
France . . .	8	8	16	17·6
Germany . . .	6	5	11	12·0
Other countries . . .	27	21	48	52·8
Total . . .	52	39	91	100·0

Shipping.—Italians have a genius for navigation, and their length of coast-line gives them every facility to cultivate maritime enterprise, yet port-entries show that 75 per cent. of Italian trade is done on foreign bottom, mostly British. The merchant-shipping under the Italian flag numbers only 780,000 tons register, with a carrying-power of 1,410,000 tons, hardly 5 per cent. of the carrying-power of the British flag.

Internal Trade.—The amount at various dates was approximately as follows:—

	Millions £ Sterling.		
	1830.	1860.	1894.
Agriculture . . .	96	160	204
Manufactures . . .	94	139	190
Mines, forestry, &c.	2	5	8
Imports . . .	13	33	44
Total . . .	205	337	446

The ratio of internal trade to population is only £15 per head, as compared with £30 in France and £42 in the United Kingdom.

Railways.—A short line of 13 miles was opened in 1839, but little was done in the way of construction during twenty ensuing years. Between 1865 and 1890 there were opened to traffic 5600 miles of new lines, an average of 220 miles a year, and at present Italy has 8800 miles, representing a cost of 184 millions sterling, which includes 6400 miles of State railways. Traffic returns per mile compare with those of Austrian railways thus:—

	Receipts, £.	Expenses, £.	Profit, £.
Italian	1,265	858	407
Austrian	1,510	860	650

The profit on Italian lines hardly gives 2 per cent. on capital, as compared with $3\frac{1}{2}$ per cent. in Austria. Goods traffic is very small, not quite 14 million tons on a mean haulage of 100 miles, perhaps because the tariff is the highest in Europe, 1 penny a ton per mile.

Banks.—Banking-power in 1885 amounted to 108 millions sterling, but the banks have since then suffered such reverses that it is now perhaps less. The country has been flooded with dishonest money (*i.e.*, inconvertible notes), and the notes of Genoese banks are not current in Naples, nor *vice versa*. In 1874 gold was at 14 per cent. premium, and the currency fluctuated so much that in 1884 a foreign loan was made which enabled the banks to resume specie payments. A suspension again took place in 1893, which continues. The issue consists of Government greenbacks and notes issued by banks, the bank issue having doubled since 1871, viz. :—

Issued by	1871, £.	1894, £.
State . . .	25,200,000	19,700,000
Banks . . .	23,100,000	45,100,000
Total . . .	48,300,000	64,800,000

The present amount of paper-money is 50 per cent. more than in the United Kingdom.

EARNINGS AND WEALTH

The earnings of the Italian people at various dates were approximately as follows :—

	Millions £ Sterling.		
	1890.	1890.	1894.
Agricultural . . .	58	96	122
Manufacturing . . .	47	70	95
Mining, forestry, &c. . .	2	5	8
Trade . . .	21	34	45
Transport . . .	22	35	47
House-rent . . .	14	20	27
Domestics . . .	9	13	18
Public service . . .	4	19	34
Professions . . .	18	29	40
Total . . .	195	321	486

This gives an average in 1894 of £14 per inhabitant, as compared with £17 in Austria and £25 in Germany.

Wealth.—Probate returns show that the amount of property which paid succession duty in the years 1884–89 was equal to £71 for each person that died in those six years. Pantaleoni applied this rule to the living, by which the national wealth in 1892 would be 2130 millions, but Italians are so clever in eluding taxation that it appears one-third of the property escaped either through omission or under-value. The above figure represents only two-thirds of the national wealth, which reaches 3160 millions sterling, made up approximately thus:—

Millions £ Sterling.			
Land 1,180	Houses . . 440	Merchandise . . 223	
Cattle, &c. . . 219	Furniture . . 220	Sundries . . 631	
Railways . . . 184	Factories . . 63	Total . . 3,160	

Land.—An official report in 1844 estimated the value of cultivated land at £11, uncultivated at £5, per acre, according to which the landed value in that year would be 377 millions sterling. The report of 1882 was as follows:—

	Acres.	Millions £.	£ per Acre.
North	22,600,000	597	26·5
Papal States	10,800,000	115	10·6
Naples	24,900,000	468	18·8
Total	58,300,000	1,180	20·3

Houses.—The assessed rental of house-property in 1892 was £26,400,000, equal to a capital value of 440 millions: the Archivio estimate in 1880 was 380 millions sterling, but was manifestly too low.

The total value of real estate is officially put down at 1708 millions sterling, which is equal to 54 per cent. of the estimated total (3160 millions) in the preceding table: the ratio of real estate in France is only 49 per cent. It appears from the Probate returns that the average wealth per head of persons who died in the years 1872–75 was only £57, as

compared with £71 in 1885–89 : applying the same ratio to the living, this gives an increase of 20 shillings yearly per inhabitant, against 68 shillings in France.

FINANCE

The aggregate revenues and debt of the States that now compose the kingdom of Italy were at various dates as follows :—

	1850, £.	1861, £.	1895, £.
Revenue . .	8,300,000	38,000,000	67,200,000
Debt . .	48,300,000	97,000,000	505,000,000

If we deduct the amount expended for State railways, we find that since 1861 the aggregate of deficits has been 260 millions sterling, or 8 millions yearly. Schools, high-roads, and other public works will account for some of these deficits, but a good deal must be set down to extraordinary military and naval expenditure arising from the Triple Alliance. The budgets of 1875 and 1895 compare as follows :—

	Revenue (000's omitted).		Expend. (000's omitted)	
	1875, £.	1895, £.	1875, £.	1895, £.
Customs . .	6,600	11,400		
Taxes . .	33,100	47,600	Debt . .	20,100
Sundries . .	4,100	8,200	Army . .	7,800
Total . .	43,800	67,200	Government	15,300
			Total . .	43,200
				72,500

If we deduct from the revenue and expenditure of 1894 the sums received and expended on State railways, we find the revenue 62, the expenditure 68, millions sterling, showing a deficit of 6 millions. The amount raised by taxation in 1894 was 56 millions, to which, adding 27 millions for local taxes, the total becomes 83 millions, say 54 shillings per head. The incidence of tax compared with national earnings is very heavy :—

	Millions £ Sterling.		Tax Ratio. Per Cent.
	Earnings.	Taxation.	
Italy	436	83	19
France	1,199	144	12

Debt.—Although the debt is nominally 505 millions we may deduct the value of State railways, 130 millions, which brings it down to 375 millions sterling: there are also Communal debts amounting to 48, so that the total debt may be said to be 423 millions, and this, if compared with national wealth, shows a lighter ratio than in France; the amounts are as follows:—

	Millions £ Sterling.		
	Wealth.	Debt.	Debt Ratio. Per Cent.
Italy	8,160	423	13½
France	9,890	1,370	14

Unfortunately the Italian debt must go on increasing, by the piling up of deficits, unless military expenditure be curtailed.

IX

SPAIN

THIS country is thinly populated, the census of 1887 showing 17,300,000 inhabitants, being only 90 to the square mile, as compared with 270 in Italy. Emigration has increased in recent years, viz.:—

Period.	To S. America.	All Countries.	Per Annum.
1861-85 . . .	205,000	515,000	20,600
1886-92 . . .	185,000	505,000	72,000
32 years . . .	390,000	1,020,000	32,000

There are only 51,000 foreigners residing in Spain, while the number of Spaniards living abroad is over 600,000, mostly in South America. To judge by the returns for the five largest cities, urban population has exactly doubled since 1830, while rural has risen hardly 50 per cent. Spain has only twenty-five cities with more than 30,000 souls, making up an aggregate of 2,300,000 souls, or 13 per cent. of the population. The census of 1877, in giving the occupations only of males, showed 4,107,000 workers, to which must be added 50 per cent., in each class, for female, giving the following result:—

	Agriculture.	Manufactures.	Commerce.	Total.
Men . .	2,720,000	1,170,000	220,000	4,110,000
Women . .	1,360,000	580,000	110,000	2,050,000
Total . .	4,080,000	1,750,000	330,000	6,160,000

Here there is no allowance for professions and sundry occupations, which in other countries average 16 per cent. of

total : this would be 1,170,000, making a total of 7,330,000, and as the population of working-age (15-60) amounts to 10,500,000, it would appear that 30 per cent. of the adult inhabitants have no visible or useful means of livelihood.

The working-power of the nation was as follows :—

Year.	Millions of Foot-tons Daily.			Foot-tons per Inhabitant.
	Hand.	Horse.	Steam.	
1870 . . .	1,510	2,400	1,100	5,010
1894 . . .	1,590	2,640	4,520	8,750

Steam-power has quadrupled since 1870, viz. :—

Year.	Steam Horse-power.			Total.
	Fixed.	Locomotives.	Steamboats.	
1870 . . .	20,000	210,000	45,000	275,000
1894 . . .	50,000	600,000	480,000	1,130,000

The steam-power nearly approaches that of Italy, although the population of Spain is 40 per cent. less.

AGRICULTURE

According to the Registro of 1803 Spain had then 60 million acres under crops, but this was an official exaggeration. Malchus in 1828 put down the cultivated area at 23 million acrea. Coming down to our own time we find Neumann Spallart's estimate in 1876, of 32 million acres under tillage, and grain crops summing up 8,100,000 tons. On the other hand, an official return for 1890 estimates 41 million acres under grain : if this were true the grain crop would exceed 12 million tons, whereas Juraschek's "Uebersichten" (1893) makes the total 5 million tons. The area of Spain may be set forth approximately as follows :—

	Acres Cultivated.		Uncultivated.
Grain . . .	20,800,000	Pasture . . .	21,000,000
Vineyards . . .	4,200,000	Forest . . .	16,400,000
Other crops . . .	7,200,000	Desert . . .	55,700,000
Total . . .	32,200,000	Total . . .	93,100,000

Thus it would appear that only one-fourth of the kingdom is cultivated. The production of wheat down to 1878 usually left an annual surplus of 130,000 tons for exportation, but during the last three years, ending 1894, there has been a deficit of 330,000 tons yearly; that is to say, Spain subsists on imported wheat during fifty days in the year. Increased attention has been of late years devoted to vineyards, the export of wine in the last six years averaging 170 million gallons, as compared with 48 millions in the quinquennium ending 1877. The ordinary vintage in recent years has been 610 million gallons. Reducing all food to a grain denominator, the production is approximately as follows:—

	Quantity.	Equiv. in Grain.
Grain, tons	5,800,000	5,800,000
Potatoes, „	1,500,000	500,000
Meat, „	430,000	8,400,000
Wine, gallons	600,000,000	6,000,000
Total		15,700,000

This is equivalent to 36 bushels per inhabitant, which shows that however small the cultivated area, Spain raises enough food for her population; but as one-third of it is in the form of wine, some of this has to be exported, to pay for imported wheat and stockfish. The value of all farm products was estimated by Argüelles in 1832 at 102 millions sterling; it is now approximately 135 millions, viz.:—

Grain	£39,200,000
Wine	33,600,000
Green crops	21,200,000
Meat	20,200,000
Dairy and sundries	21,000,000
Total	£135,200,000

The productive area being 53 million acres, this gives a mean product of 51 shillings per acre, against 77 in Italy, and an average of £33 per hand, against £30 in Italy. The Registro for 1877 showed 596,000 landowners, holding 65 million acres, an average of 110 acres per estate. There were

3900 hidalgos or country gentlemen whose rent-roll exceeded £400 a year. Agricultural capital in 1890 compared with the official statement for 1832 as follows :—

	Millions £ Sterling.			
	Land.	Cattle.	Sundries.	Total.
1832 . . .	724	34	76	834
1890 . . .	1,056	46	110	1,212

Dividing the capital among the number of hands, it gives an average of £295 each, against £430 in France. The annual product of farms is equal to 11 per cent. on the agricultural capital, the same ratio as in the United Kingdom.

FORESTS AND FISHERIES

The forest area is 16,400,000 acres, but there are no returns as to the annual product, or the number of men employed in wood-cutting. If we suppose an average yield of 4 shillings per acre (that is, half the ordinary European yield), the annual product will reach £3,300,000. This, of course, would include cork, the export of which reaches £900,000 a year. The consumption of firewood probably averages a value of 2 shillings per inhabitant, as in Italy, and this would amount to £1,800,000. As regards timber for building, Spain seems to rely mostly on foreign supplies, importing nearly 2 million tons yearly.

Fishing is carried on by 10,200 boats, counting 40,000 fishermen, who take 50,000 tons of fish, value about £600,000 sterling. This is, however, insufficient for home consumption, the import of codfish reaching 45,000 tons, valued at £960,000.

MANUFACTURES

Spain, so famous in the Middle Ages for her manufactures, now ranks low in this branch of industry. Protective tariffs have in some respects shut out foreign goods, but smuggling

is carried on so extensively that Contrabandistas are the only gainers. Textile factories have, nevertheless, made considerable progress in late years, the consumption of fibre having nearly doubled since 1872, as shown thus:—

Year.	Tons of Fibre.			
	Cotton.	Wool.	Flax, &c.	Total.
1872 .	28,000	21,000	10,000	59,000
1894 .	65,000	25,000	10,000	100,000

Cottons.—An official statement in 1833 showed that the mills had 800,000 spindles and consumed 8000 tons of cotton. The latest report, published in 1886, showed 1,800,000 spindles, 53,000 operatives, and an output estimated at £12,400,000. This was, however, a fictitious value, the quantity of fibre consumed showing that the real value could not exceed 9 millions. Cotton goods are exported to the annual value of 2 millions sterling.

Woollens.—This industry is so backward, in spite of Protection, that Spain is unable to consume her own wool, or even to produce woollen fabrics sufficient for her population. The clip averages 30,000 tons, of which one-fourth is exported, and the consumption in the mills, including some imported wool, is about 25,000 tons: there are 25,000 operatives, and the output appears to be 6½ millions sterling. The value of woollen goods imported in the years 1891–94 averaged £800,000.

Linens.—This industry is declining, and the importation of linen goods has doubled since 1872. The latest official report showed 6000 operatives, and an output estimated at £1,100,000, equal to £180 per operative.

Silks.—The consumption of raw silk is under 300 tons yearly, more than half being imported. The factories count 8000 hands, and the official report values the output at £2,800,000, a manifest exaggeration, which the *Bulletin Statistique* reduces to 1 million sterling. Silk goods are, moreover, imported to the value of £400,000 a year.

Hardware.—Although Spain is so rich in iron-fields she gets much of her hardware from England. The production and consumption of pig-iron are shown thus:—

	Tons of Iron.		
	1890.	1870.	1863.
Production	20,000	70,000	180,000
Imported	20,000	80,000	70,000
Consumption	40,000	150,000	250,000

The value of iron and steel goods made in the country is about 4 millions sterling, or two-thirds of the consumption, which latter averages 7 shillings per inhabitant. The manufactures of copper, lead, and zinc do not make up a million sterling, the greater part of the ores raised and metal extracted being sent to other countries for elaboration.

Leather.—Cordoba is no longer a flourishing centre of this trade, which is now of secondary importance. The annual consumption of leather in Spain is about 28,000 tons, one-fifth imported, and the value of this branch of manufacture is about 14 millions sterling.

Summary.—The value of goods manufactured was at various dates approximately as follows:—

	Millions £ Sterling.		
	1840.	1870.	1894.
Textiles	6	10	19
Hardware	1	3	5
Leather	9	16	14
Food	20	30	34
Clothing	7	10	14
Houses and furniture	7	9	11
Sundries	18	20	24
Total	63	98	121

According to an official statement in 1860 the output of the factories reached £63,200,000, without counting the work of artisans.

MINERALS

Mining industry has increased ten-fold in the last thirty years, the weight showing as follows:—

Year.	Tons of Mineral.					Total.
	Ironstone.	Copper Ore.	Lead, &c.	Coal.		
1863 . . .	170,000	140,000	420,000	320,000	1,050,000	
1894 . . .	5,400,000	2,400,000	1,300,000	1,700,000	10,800,000	

The value of minerals in 1894 was £3,900,000, the number of miners 59,000, showing an output of £66 per man.

COMMERCE

Foreign trade has more than doubled since 1860, viz.:—

Year.	Imports £.	Exports £.	Total £.
1860 . . .	14,500,000	10,700,000	25,200,000
1894 . . .	32,200,000	26,900,000	59,100,000

Commercial relations with France are greater than with any other country, the returns for five years down to December 1892 giving the following averages:—

	Millions £ Sterling.			
	Imports from.	Exports to.	Total	Ratio.
France . . .	11	15	26	87·7
Great Britain . . .	7	8	15	21·7
Other countries . . .	17	11	28	40·6
Total . . .	35	34	69	100·0

The foreign trade of Spain is relatively greater than that of Italy, being £4 per inhabitant against £3, which is perhaps owing to the fact that Spain has so many colonies.

Shipping.—Merchant-shipping has quadrupled in carrying-power in the last twenty years, the tonnage being as follows:—

Year.	Steam.	Sail.	Tons Register.	Carrying-power.
1872 .	45,000	340,000	385,000	520,000
1893 .	480,000	200,000	680,000	2,120,000

Notwithstanding this remarkable increase Spain would require double her present shipping to carry on her trade, since only 44 per cent. of the tonnage of Spanish port-entries and clearances is under the national flag.

Internal Trade.—The amount at various dates was approximately as follows:—

	Millions £ Sterling.		
	1832	1860.	1894.
Agriculture	102	140	185
Manufactures	50	78	121
Mining, forestry, &c. . . .	3	5	8
Imports	4	15	32
Total	159	238	296

Internal trade averages £17 per inhabitant, against £15 in Italy and £30 in France.

Railways.—The first line was one of 18 miles, from Barcelona to Matard, opened in 1848, and the length of railways working in January 1894 was 6710 miles, representing a cost of 108 millions sterling. There are no State railways, but the various companies received subsidies, the amount of which down to 1880 reached 28 millions sterling, equal to 40 per cent. of the sum spent until then on railways. Traffic returns per mile compare with those of Italian lines thus:—

	Receipts, £.	Expenses, £.	Profit, £.
Spanish	1,201	524	677
Italian	1,265	858	407

The profit on Spanish lines is 4½, on Italian 2, per cent. Working-expenses are lower in Spain than in any other part of the world, only 43 per cent. of receipts.

Banking.—Spain was described by a modern traveller as a country of three banks and one hundred bull-rings. Banking-power in 1889 was 47 millions sterling; hardly £3 per inhabitant.

EARNINGS AND WEALTH

The earnings of the Spanish people at various dates were approximately as follows:—

	Millions & Sterling.		
	1832.	1860.	1894.
Agricultural	62	84	81
Manufacturing	25	40	60
Mining, forests, &c.	3	5	8
Trade	16	24	30
Transport	17	25	31
House-rent	7	10	14
Domestics	5	7	9
Public service	4	10	15
Professions	14	21	25
Total	153	226	273

The earnings are equal to £15 per inhabitant, against £14 in Italy and £30 in France.

Wealth.—The valuation by the Junta de Medios in 1832 was very incomplete, making real estate 923 millions, personal property 186, total 1109 millions sterling. We may take the real estate to have been correct, but the personal property would seem to have amounted to 547 millions, making a total of 1470, the figures comparing with those at present thus:—

	Millions & Sterling.		
	1832.	1893.	Increase.
Land	686	1,056	370
Cattle, &c.	106	156	50
Houses	175	240	65
Furniture	87	120	33
Factories	22	40	18
Railways . . . . .	...	108	108
Bullion	20	38	18
Merchandise	80	148	68
Sundries	294	474	180
Total	1,470	2,380	910

From this it would appear that the increase of wealth has been only 61 per cent. in the same number of years, whereas

M'Culloch says that it ought to be 100 per cent. in fifty years in countries that are fairly prosperous. The average accumulation has been about 20 shillings yearly per inhabitant, as compared with 68 shillings in France and 92 shillings in England.

Land.—If we take the real rental in 1890 as 10 per cent. over the assessment (£32,000,000) and capitalise it at thirty times same, the land will now represent a value of 1056 millions sterling, an increase of 55 per cent. since 1832, being at present approximately as follows:—

Class.	Acrea.	Value, £.	£ per Acre.
Irrigated . . .	2,500,000	225,000,000	90
Ordinary arable . . .	29,700,000	594,000,000	20
Pasture and forest . . .	37,400,000	237,000,000	6½
Waste . . .	55,700,000	...	...
Total . . .	125,300,000	1,056,000,000	...

Houses.—The assessed rental has nearly doubled, rising from 7 millions in 1832 to 12 millions sterling in 1890: the real rental is probably 20 per cent. higher, say £14,400,000, equal to a capital value of 240 millions sterling.

Distribution.—There are altogether 3,430,000 estates in Spain, but this includes house-property, the number of land-owners not exceeding 596,000, according to the survey of 1877. The landed estates cover 65 million acres, or half the area of the kingdom, giving an average of 110 acres to each estate. There are 3900 hidalgos or country gentlemen with a rent-roll exceeding £400 a year. The total land and house property is approximately as follows:—

No.	Rental, £.	Value, £.	Average Value, £.
440,000	17,600,000	528,000,000	1,200
1,210,000	18,100,000	508,000,000	420
1,780,000	8,400,000	260,000,000	150
3,430,000	44,100,000	1,296,000,000	878

The number of persons owning lands or houses is probably half that of properties, say 1,720,000, or one-tenth of the population, which is a very high ratio.

FINANCE

The finances of Spain during sixty years showed deficits amounting to 380 millions sterling, that being the excess of expenditure over revenue, as shown thus in millions £ sterling :—

Year.	Revenue.	Expenditure.	Excess.
1831-70	530	735	205
1871-90	628	803	175
60 years	1,158	1,538	380

In 1840, after the first Carlist War, Queen Isabella repudiated the debt, compelling the bond-holders to take new scrip for old at the rate of 30 for 100. A second repudiation occurred under Alfonso XII. in 1882, when bond-holders had to accept new scrip at 40 for 100. By these repudiations the debt, which would otherwise have been 776 millions, was reduced to 220 millions sterling. The budget shows little variation in the last thirty years, viz. :—

	Revenue (000's omitted).		Expenditure (000's omitted).	
	1886, £.	1896, £.	1886, £.	1896, £.
Customs	10,000	12,200	Debt	5,100
Taxes	7,700	12,600	Army	5,400
Sundries	9,800	5,500	Government	17,000
Total	27,500	30,300	Total	27,500
				30,300

The budget is reliable only as regards revenue, the estimates of expenditure being illusory. According to the *Statesman's Year-book* the public debt (including 10 millions for Cuba) amounts to 293 millions sterling; the annual interest is £12,700,000, equal to 14 shillings per inhabitant, whereas the interest on national debt in the United Kingdom is only 8 shillings per inhabitant.

X

PORUGAL

THIS little kingdom is on a par with Ireland as to area and population. The census of 1890 showed 4,700,000 inhabitants, being 144 to the square mile, but however thin the population it seems too much for the resources of the country. There has been during half a century a constant outflow of emigration, and in a period of forty years down to 1890 we find that 460,000 persons left Portugal, of whom 380,000 went to Brazil, the rest to the United States. At present the ordinary emigration is 30,000 yearly, and the number of returning emigrants about 15,000. Urban population is hardly 11 per cent. of the total, there being only two cities, Lisbon and Oporto, and twelve small towns. While the other cities of Europe have doubled or quadrupled their number of inhabitants in the last sixty years, we find that the aggregate of Lisbon and Oporto has not risen one-fourth, viz. :—

Year.	Lisbon.	Oporto.	Total.
1830 . . .	202,000	80,000	282,000
1890 . . .	242,000	106,000	348,000

There is perhaps no country in Europe where the surplus of females is so large as in Portugal, the number being as 1092 to a thousand males, which is probably the result of emigration. No census has ever been taken as to the occupations of the people, but an official return in 1860 showed 870,000 adults engaged in agriculture, the population of working-age (15 to 60) being as follows :—

	Men.	Women.	Total.
Urban . . .	180,000	140,000	270,000
Rural . . .	1,050,000	1,150,000	2,200,000
Total . . .	1,180,000	1,290,000	2,470,000

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The working-power of the nation has increased 50 per cent. since 1870, viz. :—

Year.	Millions of Foot-tons Daily.				Foot-tons per Inhabitant.
	Hand.	Horse.	Steam.	Total.	
1870	310	400	180	890	210
1890	350	420	560	1,330	290

Steam-power is trifling, summing up no more than 140,000 horse-power, of which 120,000 stand for railway locomotives.

AGRICULTURE

This is the chief occupation of the people, and yet is so backward that hardly one-fifth of Portugal is under cultivation. If we compare the latest estimates with those of Malchus, nearly seventy years ago, we find that the production of grain has increased, but wine shows little progress, viz. :—

Year.	Tons, grain.	Wine, gallons.
1827	520,000	75,000,000
1890	740,000	80,000,000

Juraschek's estimate of the grain-crop, as given above, is 20 per cent. less than Neumann Spallart's. Notwithstanding the fertility of the soil the production of grain and animal food is short of requirements, and imports average 140,000 tons of the former and 20,000 of the latter. Reducing all food to a grain denominator the production is as follows :—

	Quantity.	Equiv. in grain.
Grain, tons	740,000	740,000
Potatoes, „	270,000	90,000
Meat „	100,000	800,000
Wine, gallons	80,000,000	800,000
Total		2,430,000

This is equivalent to no more than half a ton per inhabitant. If we deduct the grain necessary for seed it will be found that the people live on native grain during ten months, and depend on what is imported for the other two months of

the year. Their meat supply is equivalent to 48 lbs. per inhabitant, and is supplemented by 10 lbs. (per head) of imported stock-fish, and a small quantity of foreign meat. Wine is the most valuable crop, the quantity exported having more than doubled in twenty years, viz. :—

	Gallons.	£ value.
1872	9,500,000	2,100,000
1892	22,100,000	8,100,000

The quantity exported is only one-fourth of the vintage, the home consumption averaging 12 gallons per inhabitant. Agricultural products are equal to 16 per cent. on capital : the capital and products may be summed up thus :—

Capital.	Products.
Land . . . £188,400,000	Wine . . . £6,700,000
Cattle . . . 10,500,000	Grain, &c. . . 11,200,000
Sundries . . . 14,900,000	Animal products . . . 8,100,000
Total . . . 163,800,000	Total . . . 28,000,000

The latest official valuation of farm products was £18,000,000 for grain, wine, &c., and £5,200,000 for animal products, in all £23,200,000.

The productive area being 11,600,000 acres, the product is equal to 45 shillings per acre, against 51 in Spain and 77 in Italy. It is stated by Portuguese writers that the kingdom consists of 5 million acres cultivated, 10 million idle but suitable for tillage, and 5 million of mountain waste. There is, however, no prospect of the available land being cultivated so long as the present system of land tenure exists. More than half the kingdom, in fact 13 million acres, or 60 per cent. of the whole area, is in the hands of noblemen who have neither the capital nor the energy to develop their estates. If it were possible for the Government to do as was done in Austria and Prussia, namely to purchase from the nobles one-half of their estates, say 6,300,000 acres, and distribute the same in thirty-acre lots among the peasantry, the cultivated area would be doubled in a few years. According to an official report there are 870,000 adults engaged in agriculture, among whom a

division of the products would give an average of £30, as compared with £30 in Italy and £33 in Spain. There are 490,000 small farms, averaging 18 acres, and after allowing for the value of noblemen's estates the average of agricultural capital corresponding to these little farms is about £210 each.

FORESTS AND FISHERIES

There are 1,200,000 acres of forest, the most valuable product being cork, of which 25,000 tons are exported yearly, worth £600,000. Firewood and timber will probably bring up the total to £1,200,000. There is no record as to fisheries, which must be worth close on a million sterling, since the exports of sardines and other tinned fish amount to 20,000 tons yearly, worth £300,000. On the other hand Portugal imports 20,000 tons of codfish, valued at £400,000, a cheap article of food for the peasantry.

MANUFACTURES AND MINERALS

There are 115 cotton, woollen, and flax mills, with steam-power of 2000 horse in the aggregate, consuming 22,000 tons of fibre, that is three times the consumption of the year 1872, and turning out goods to the value of 4 millions sterling. The supply of these goods is not sufficient, and the value of imported fabrics usually exceeds £500,000. As regards hardware the foundries consume 50,000 tons of imported iron. The silversmiths of Oporto make handsome jewellery, but this, like all manufactures in Portugal, is of trifling value. Leather consumption averages 7000 tons. The approximate value of manufactures is as follows:—

Textiles . . .	£4,800,000	Clothing . . .	£3,900,000
Hardware . . .	600,000	Houses and furn. .	3,000,000
Leather . . .	3,400,000	Sundries . . .	6,000,000
Food . . .	7,800,000	Total . . .	20,000,000

Coal is known to exist, near Oporto, but the only mineral produced is copper, of which 120,000 tons in ore are exported yearly. The salt-pits at Setubal yield 300,000 tons, and of this quantity one-half is exported. Altogether the value of minerals, according to Pery, is only £270,000 a year.

COMMERCE

Portuguese trade with foreign nations in the year 1842 hardly reached 4 millions sterling; in 1894 it exceeded 14 millions. The aggregate of five years down to 1892 gives the following averages:—

	Imports from, £.	Exports to, £.	Total, £.
Great Britain . . .	3,000,000	1,800,000	4,800,000
France . . .	1,400,000	800,000	2,200,000
Brazil . . .	400,000	800,000	1,200,000
Other countries . . .	4,400,000	1,600,000	6,000,000
Total . . .	<u>9,200,000</u>	<u>5,000,000</u>	<u>14,200,000</u>

Shipping.—The Portuguese flag, in the fallen fortunes of the kingdom, has almost disappeared from the high seas; no less than 70 per cent. of the vessels that clear from the ports of Portugal carry the British or other foreign flag. According to a statement published in 1888 the merchant-navy of Portugal counted 78,000 tons register, as compared with 80,000 tons in Lloyd's Register for 1842.

Internal trade.—This comprised in 1893 approximately 26 millions of agricultural products, 29 millions manufactures, 2 millions of forest and fishery products, and 8 millions imports, making up 65 millions sterling, which gives an average of £14 per inhabitant, against £17 in Spain and £15 in Italy.

Communications.—Fifty years ago there were neither high-roads, railways, nor mail-coaches; nothing but mule-tracks, along which even nobles travelled on horseback and ladies in palanquins. An ox-cart with a pipe of wine, drawn by two oxen, usually took ten days for a journey of 60 miles. The

first high-road was made in 1849 from Elvas to Vendas, the first railroad in 1854 from Lisbon to Carregado, 22 miles. In 1893 the kingdom possessed 1420 miles of railway, 2500 of high-road, and 480 of navigable rivers, making a total of 4400 miles. The cost of the railways is supposed to have been at the same rate as those of Spain, say £16,000 a mile, which would sum up 23 millions sterling: there are 910 miles of State railways, and the remainder was made by companies to which the Government gave subsidies. The net product of State lines in 1893 was £350,000, but the annual charge to the Treasury for loans contracted for their construction was £700,000. Traffic earnings on all lines compare with Spanish, per mile, as follows:—

	Receipts, £.	Expenses, £.	Profit, £.
Portuguese	850	450	400
Spanish	1,201	524	677

Banking.—There are thirty-eight banks, with an aggregate banking-power of 25 millions sterling. The amount of paper money in circulation in 1895 was 14 millions sterling, or £3 per inhabitant, that is relatively three times as much as in Great Britain.

EARNINGS AND WEALTH

Earnings and wealth may be summed up approximately as follows:—

<i>Earnings.</i>	<i>Wealth.</i>
Agricultural . . . £15,600,000	Land £138,400,000
Manufacturing . . . 14,500,000	Cattle 10,500,000
Forestry, &c. . . . 2,200,000	Implements, &c. . . 14,900,000
Trade 6,500,000	Houses 67,300,000
Transport 6,800,000	Furniture 33,700,000
House-rent 4,000,000	Railways 23,000,000
Domestics 2,700,000	Merchandise 32,000,000
Public service 5,300,000	Factories 9,200,000
Professions 5,800,000	Sundries 82,000,000
Total £63,400,000	Total £411,000,000

Real estate.—The latest land assessment is that of 1872, which amounted to £4,200,000 : the real rental may be taken 10 per cent. higher, say £4,620,000, which would represent a capital value of 138 millions sterling, viz. :—

Class.		Acrea.	Value, £.	£ per Acre.
Cultivated	.	3,800,000	76,000,000	20
Pasture, &c.	.	7,800,000	62,400,000	8
Waste	.	9,200,000	...	...
Total	.	20,800,000	138,400,000	...

As regards houses the same assessment valued urban house-property at £900,000 per annum, equal to a capital value of £15,000,000 sterling, or £40 per head of the urban population. Nothing is known of rural house-property. It may be assumed that house-property for the whole kingdom bears the same ratio as in Spain to population, that is £14 per inhabitant, which would amount to 67 millions sterling. This makes the total real estate approximately 205 millions sterling, or 50 per cent. of the wealth of the kingdom, as compared with 49 per cent. in France.

Ratio per head.—The average of earnings is under £14, that of wealth is only £87, per inhabitant, showing that Portugal is relatively one of the poorest nations in Europe.

FINANCE

Between 1825 and 1867 there was so loose a system of finance that expenditure was usually 40 per cent. over revenue, and thus the debt rose from 7 to 47 millions sterling. In the subsequent period of twenty-seven years things have been much worse, and deficits piled one on another to the amount of 101 millions, the debt now amounting to 148 millions sterling. The average revenue and expenditure since 1868 are shown as follows, per annum :—

Period.	Revenue, £.	Expenditure, £.	Deficit, £.
1868-80 . .	6,100,000	9,700,000	3,600,000
1881-95 . .	7,700,000	10,400,000	2,700,000

Thus during the last quarter of a century deficits have averaged more than 3 millions sterling, but this includes the outlay for construction of State railways, amounting to 15 millions : if this sum be deducted, the actual debt of Portugal will be reduced to 133 millions sterling. The budgets of 1868 and 1893 compare as follows :—

	Revenue (000's omitted)		Expend. (000's omitted)	
	1868, £.	1895, £.	1868, £.	1895, £.
Customs .	2,000	4,900	Debt . .	1,300
Taxes .	1,200	3,700	Army . .	800
Sundries .	600	1,900	Government. .	3,000
Total . .	3,800	10,500	Total . .	5,100
				10,500

The amount of taxation is £8,600,000, equal to 13½ per cent. of the earnings of the people ; and the debt, after deducting for railways, to 33 per cent. of national wealth, a state of things that leaves room for some anxiety.

XI

SWEDEN AND NORWAY

THESE two kingdoms are constitutionally distinct, but in all economical and industrial interests may be considered together. The population approaches 7,000,000 souls, being densest in Sweden, viz. :—

	Sq. Miles.	Population.	Per Sq. Mile.
Sweden . . .	67,700	4,100,000	61
Norway . . .	81,300	1,800,000	22
Lapland . . .	146,000	900,000	6
Total . . .	295,000	6,800,000	23

Although the population is sparse it is quite as much as the country can support with a very limited area under crops. The outflow of emigration in the last ten years averaged 60,000 yearly, that is about three-fourths of the natural increase. Since 1851 more than 1,200,000 persons have emigrated, viz. :—

Period.	Swedes.	Norwegians.	Total.
1851-80 . . .	288,000	202,000	490,000
1881-93 . . .	462,000	258,000	720,000
43 years . . .	750,000	460,000	1,210,000

The American census of 1890 shows that 805,000 of the above emigrants were then living in the United States, of whom 670,000 were farmers in the Western prairies, especially Minnesota and Illinois. According to official returns, 80 per cent. of emigrants go to the United States, 20 per cent. to Denmark. The urban population of Sweden and Norway rose 300 per cent., the rural 60 per cent., between

the years 1831 and 1891. The occupations of the people at the last census were :—

	Sweden.	Norway.	Total.
Agriculture . . .	1,070,000	330,000	1,400,000
Manufactures . . .	380,000	180,000	560,000
Commerce . . .	140,000	90,000	230,000
Various . . .	570,000	460,000	1,030,000
Total . . .	2,160,000	1,060,000	3,220,000

The working-power of these kingdoms has doubled since 1870, viz. :—

Year.	Millions of Foot-tons Daily.			Foot-tons per Inhabitant.
	Sweden.	Norway.	Total.	
1870 . . .	2,080	760	2,840	470
1894 . . .	3,810	1,900	5,710	840

The components of power in 1894 were approximately as follows :—

	Millions of Foot-tons Daily.				Foot-tons per Inhabitant.
	Hand.	Horse.	Steam.	Total.	
Sweden . . .	430	1,500	1,880	3,810	780
Norway . . .	170	450	1,280	1,900	970
Total . . .	600	1,950	3,160	5,710	840

The total steam-power of the two kingdoms was equal to 790,000 horse in 1894, having quintupled since 1870: it is now as 115 horse-power per thousand inhabitants, as compared with 150 horse-power in Germany.

AGRICULTURE

When Bernadotte came to the throne in 1818 he found that 30 noblemen owned Norway, and 1200 gentlemen Sweden, under whom there were 70,000 farmers with lots averaging 20 acres, the whole cultivated area of the two kingdoms not exceeding 1,400,000 acres. The grain-crops seldom reached 50,000 tons, or 1 bushel per inhabitant, for which reason the bread of the rural population was made of sawdust and rye. The nobles lived in riotous extravagance, until the banks would lend them no more money: thereupon a crisis ensued,

and many large estates were brought to the hammer. More than 10,000,000 acres were sold to the peasants, at prices averaging 17 pence per acre, and when Lang visited Sweden and Norway in 1830 he was surprised to find that "the condition of the rural classes was better than in Scotland." In 1840 the peasants had acquired no less than 16,000,000 acres, and the area under tillage was 5,200,000 acres, having quadrupled in twenty years. At present the production of grain averages 3,100,000 tons yearly, which is short of the requirement. Sweden had an annual surplus of about 300,000 tons down to 1882, since which year she has usually imported 70,000 tons per annum. Norway has so unfavourable a climate that she has never been able to raise enough grain for her people; the supply during five months consists of imported grain, that is 250,000 tons. Reducing all food to a grain denominator, we find the annual production as follows:—

	Weight Tons.		Grain Equivalent.	
	Sweden.	Norway.	Sweden.	Norway.
Grain . . .	2,750,000	450,000	2,750,000	450,000
Potatoes . . .	1,440,000	660,000	480,000	220,000
Meat . . .	160,000	70,000	1,280,000	560,000
Total . . .	...	...	4,510,000	1,230,000

The area under crops in Norway is almost the same as it was thirty years ago, viz., 600,000 acres: on the other hand the Norwegian farms in the Western States of North America cover 2,400,000 acres, from which it appears that agriculture in Norway is a declining industry on account of the climate. The areas of the two kingdoms are made up thus:—

	Acres.		
	Sweden.	Norway.	Total.
Crops . . .	8,400,000	600,000	9,000,000
Pasture . . .	3,900,000	2,200,000	6,100,000
Productive . . .	12,300,000	2,800,000	15,100,000
Unproductive . . .	98,400,000	76,900,000	175,300,000
Total . . .	110,700,000	79,700,000	190,400,000

The total value of farm products is approximately as follows:—

		Millions £ Sterling.				
		Grain.	Sundries.	Meat.	Dairy, &c.	Total.
Sweden . . .	. 13	7	8	9	37	
Norway . . .	. 2	1	3	3	9	
Total . . .	. 15	8	11	12	46	

The value of farm products, compared with the productive area, is equal to 60 shillings per acre in Sweden and 64 in Norway, as compared with 96 in Germany. The product per hand is £35 in Sweden and £27 in Norway, against £44 in Germany. The agricultural capital of the two kingdoms may be set down approximately thus:—

	Value, Millions £ Sterling.		
	Sweden.	Norway.	Total.
Land	154	58	212
Cattle	29	12	41
Sundries	18	7	25
Total	201	77	278

In 1837 the agricultural wealth of Sweden was only 51 millions, and if Norway bore then the same ratio to the sister-kingdom as at present, her rural capital would have been 19 millions, together making 70 millions sterling. It appears, therefore, that in little more than half a century the farmers (who previously lived on sawdust and fish) have been enabled, by the breaking up of the nobles' estates, to add 208 millions sterling to the national wealth. In Sweden there are 245,000 farms, covering 12,300,000 acres of cleared and improved land, in Norway 130,000 farms with 2,800,000 acres. Nobles still own the half of these kingdoms, and often let portions of their vast estates to tenants: such a portion is called "mantal," which comprises 400 acres, and there are 40,000 mantal-holders in Sweden alone.

FORESTS AND FISHERIES

The forest area is 65 million acres, which extent, in the European continent, is surpassed only in Russia. The cutting averages 18 million tons or 900 million cubic feet, one-third firewood, the rest being used for timber: the production and consumption are approximately as follows:—

	Tons.		Value, £ Sterling.	
	Sweden.	Norway.	Sweden.	Norway.
Firewood . . .	4,900,000	2,000,000	800,000	300,000
Timber, home . .	3,000,000	1,400,000	2,700,000	1,300,000
Do., exported . .	5,600,000	1,100,000	6,500,000	1,500,000
Total . . .	13,500,000	4,500,000	10,000,000	3,100,000

Most of the farmers being also wood-cutters it is impossible to ascertain how many hands are employed in forestry, but the number is certainly over 200,000. The forest industry of Sweden is more than 40 shillings per inhabitant, as compared with 5 shillings in Germany.

Fisheries constitute another great industry, the value of which is approximately as follows:—

	Sweden, £.	Norway, £.	Total
Home consumption . . .	700,000	900,000	1,600,000
Export	500,000	2,200,000	2,700,000
Total	1,200,000	3,100,000	4,300,000

Norway has 120,000 fishermen, whose take gives little more than £25 a year to each, notwithstanding the hazardous nature of their lives, about 120 men, or 1 per thousand, being drowned every year. Swedish fisheries occupy 30,000 men, whose take averages £40 per man.

MANUFACTURES

The Gustavus tariff during the first quarter of the century imposed prohibitory duties on imports with the view of protecting native industry, but it was not until the abolition of

this tariff, in 1828, that manufactures began to exhibit any sign of vitality. A report published in 1839 showed that this branch of industry had grown 35 per cent. since the change of tariff. The latest official estimate is that of 1876, which gives the output of all factories in Sweden as £10,200,000, and if the work of artisans and small industries had been included the value would probably have doubled. As regards Norway most of the manufactures are of the simplest character: the peasantry during the long winter make all necessities for domestic use, except cutlery and pottery, which they get from England, while there are also some factories in the large towns.

Textiles.—The consumption of fibre in the two kingdoms rose from 25,000 tons in 1872 to 52,000 in 1894, Sweden in the latter year standing for two-thirds, Norway one-third, of the total. The mills consumed in 1894 as follows: 22,000 tons of cotton, 13,000 of wool, and 5000 of flax, hemp, &c., the total output reaching an approximate value of $7\frac{1}{2}$ millions sterling.

Hardware.—In the earlier years of the century Sweden produced as much iron as Germany; at present the production is as one to ten. Swedish iron is specially suited for making steel; the output of iron is nearly 500,000 tons, of which one-fifth is converted into steel. The production of iron has quadrupled since 1850.

Leather.—The annual consumption of leather is about 17,000 tons, one-third made from imported hides. The value of manufactures is 8 millions sterling, Sweden standing for three-fourths.

Paper.—This industry has of late years sprung into importance in Sweden, wood-pulp being the chief material; the export of wood-pulp and paper rose from 8000 tons in 1872 to 130,000 in 1894.

Sundries.—Distilleries and breweries turn out yearly 20 million gallons of potato-brandy and 30 millions of beer, worth 4 millions. The Jonkoping match factories have trebled their

output since 1872, and now export 1b,000 tons of matches, worth £400,000. Shipbuilding amounts to 2 millions sterling per annum, Norway standing for two-thirds. The value of manufactures in 1894 was approximately as follows :—

	Sweden, £.	Norway, £.	Total, £.
Textiles . . .	4,900,000	2,700,000	7,600,000
Hardware . . .	6,200,000	1,200,000	7,400,000
Leather . . .	6,000,000	2,000,000	8,000,000
Food . . .	9,800,000	3,900,000	13,700,000
Clothing . . .	4,800,000	1,900,000	6,700,000
Houses & furniture	4,300,000	1,600,000	5,900,000
Sundries . . .	9,000,000	3,300,000	12,300,000
Total . . .	45,000,000	16,600,000	61,600,000

The manufacturing output has more than doubled in twenty years. Sweden possesses a great advantage in cheap and abundant water-power, supplying the place of steam, which accounts for the steady increase of her manufactures.

MINERALS

Sweden has an inexhaustible supply of the richest iron ore, the ordinary yield being 48 per cent. of metal, against 40 in England. There are 200 mines and 1400 smelting-works, which employ 20,000 men. The quantity of ore raised in 1893 was 1,500,000 tons, of which one-third was exported. The richest ore is found at Dannemora and Tuberg, the latter a mass of magnetic iron. There are also zinc and copper mines, the quantity of metal extracted from these ores being 20,000 and 1200 tons respectively. Coal-mines are worked in the southern provinces, but nine-tenths of the coal used in Sweden is imported from England, the annual consumption being 2,400,000 tons, and the quantity raised seldom exceeding 200,000. The annual value of all mining products (including £300,000 for Norway) is just 2 millions sterling, and the number of miners 32,000, that is an average of £62 each man.

COMMERCE

The united commerce of these kingdoms has quintupled since 1850, showing as follows :—

Year.	Millions £ Sterling.		
	Imports.	Exports.	Total.
1850	5	6	11
1894	31	24	55

Forty years ago, when Scandinavia was poor, there was a surplus of exports ; but in later times, as always happens when nations become prosperous and have a valuable carrying-trade, there has been a large excess of imports. Taking the aggregate trade of the two countries in the past five years, we find the averages thus :—

	Millions £ Sterling.			
	Imports from.	Exports to.	Total.	Ratio.
Great Britain	9	10	19	34·5
Germany	9	8	12	21·8
Denmark	3	2	5	9·1
Other countries	10	9	19	34·6
Total	—	—	—	—
	31	24	55	100·0

During the said five years (1888–92) the shares of the above total that corresponded to the two kingdoms were :—

	Millions £ Sterling.		
	Sweden.	Norway.	Total.
Imports	20	11	31
Exports	17	7	24
Total	37	18	55

Shipping.—Norwegians have always been famous as a seafaring people, and their merchant-shipping, as compared with population, is relatively double in carrying-power to the British. If we put Norwegian and Swedish together, the carrying-power of the shipping of these kingdoms is 50 per cent. over that of France, and holds the next place below that

of Germany. The growth of Scandinavian shipping is shown as follows :—

Year.	Tons Register.			Carrying-power, Tons.
	Norwegian.	Swedish.	Total.	
1837 .	210,000	120,000	330,000	330,000
1872 .	1,120,000	390,000	1,510,000	1,740,000
1894 .	1,500,000	550,000	2,050,000	3,310,000

The united shipping comprises 420,000 tons register of steamers and 1,630,000 of sailing-vessels : the carrying-power that corresponds to Norway is 2,220,000, to Sweden 1,090,000 tons.

Internal Trade.—This may be summed up for 1894 briefly thus :—

	Millions £ Sterling.		
	Sweden.	Norway.	Total.
Agricultural products . . .	87	9	46
Manufactures . . .	45	17	62
Forests, fisheries, &c. . .	13	6	19
Imports . . .	20	11	31
Total . . .	115	43	158

This is an average of £24 per inhabitant in Sweden and £22 in Norway, against £26 in Germany.

Railways.—The first line in Norway was opened in 1854, from Christiania to Moesen, 40 miles, and in Sweden in 1856. A system of State railways, mostly narrow-gauge, was begun in Norway in 1862 and completed in twenty years, with a length of 930 miles. Two systems were begun in Sweden in 1870, by the State and by joint-stock companies, with the result that 5000 miles had been constructed in 1890. At present the length of railways working and the sum spent in construction in the two countries are :—

		Miles.	Millions £.	£ per Mile.
Sweden	5,730	33	5,800	
Norway	1,000	7	7,300	
Total	6,730	40	6,000	

Sweden has more railways for population than any other country in Europe, namely a mile for 870 inhabitants, whereas in the United Kingdom we have only a mile for 1900. State railways in Sweden are one-third of the total length; in Norway they all belong to the State, except the Moesen line above mentioned. Thus the aggregate total is 2780 miles of State lines, 3640 of companies. In both countries the State lines are run less with a view to profit than for the benefit of internal trade, and hence the net product on capital is only $2\frac{1}{2}$ per cent. in Sweden, less than 1 per cent. in Norway, while the companies' lines in Sweden yield $4\frac{1}{2}$, the Moesen line in Norway 7, per cent. net yearly. If we put together both State and companies' lines the traffic per mile in the two countries will be found much lower than even on Russian lines, viz. :—

	Receipts, £.	Expenses, £.	Profit, £.
Swedish	531	329	202
Norwegian	517	387	130
Russian	1,610	970	640

Tariffs are fixed so low that Swedish railways are made to give a gross return of 52 pence, Norwegian 36 pence, per mile run by locomotives, as compared with 73 pence in Germany.

Canals and Roads.—A complete system of canals has been constructed, beginning with the Gotha Canal, which was opened in 1800: this system communicates by way of Lake Mälar with the Gulf of Bothnia, forming a complete water-way of 700 miles from Gottenburg as far as Tornea in the Arctic Circle. More than 70,000 vessels passed through the canals in 1892. There are, moreover, 12,400 miles of royal highways, besides 19,000 of departmental roads.

Banks.—The banking-power of Sweden is 34, of Norway 12, millions sterling. There is a State-bank in each country which issues up to 3 millions sterling: the issue averages 30 shillings per inhabitant in Norway, 13 in Sweden, as compared with 21 shillings in the United Kingdom. The Enskilda or joint-stock banks were begun in Sweden in 1830, and are now found all over the kingdom: there are thirty-five similar

banks in Norway. Savings-bank deposits amount to 18 millions sterling in Sweden, 12 in Norway, that is nearly £4 per inhabitant in the first, £6 in the second, country.

EARNINGS AND WEALTH

The earnings of the two nations are approximately as follows:—

	Millions £ Sterling.		
	Sweden.	Norway.	Total.
Agricultural . . .	22	6	28
Manufacturing . . .	23	8	31
Forests, fisheries, &c. . .	13	6	19
Trade . . .	12	4	16
Transport . . .	13	4	17
House-rent . . .	6	2	8
Domestics . . .	4	1	5
Public service . . .	3	2	5
Professions . . .	10	3	13
Total . . .	106	36	142

This gives an average of £22 per inhabitant in Sweden, £18 in Norway, as compared with £25 in Germany.

Wealth.—The principal components of wealth are approximately as follows:—

	Millions £ Sterling.		
	Sweden.	Norway.	Total.
Land . . .	154	58	212
Cattle, &c. . .	47	19	66
Railways . . .	33	7	40
Shipping . . .	5	12	17
Houses . . .	96	36	131
Furniture . . .	48	17	65
Factories . . .	15	6	21
Merchandise . . .	58	22	80
Sundries . . .	114	44	158
Total . . .	570	220	790

Land.—The official valuation in 1893 was 140 millions sterling for Sweden, 58 for Norway, but Professor Fahlbeck considers that the real landed value in Sweden is 154 millions.

According to a valuation in 1836 the land then stood for 33 millions, from which it would appear that this item has quintupled in half a century.

Houses.—The official returns of 1893 show the value of houses in Sweden to be 96, in Norway 35, millions sterling. Thus the total value of real estate gives an average of £52 per inhabitant in Sweden, £47 in Norway, showing that in point of wealth to population the condition of the two countries differs but slightly.

FINANCE

The finances of these two Scandinavian kingdoms offer an agreeable contrast to those of the nations of Southern Europe, as if climate or race had something to do with the thrifty or careless handling of public money. If we put together the budgets of both countries we find the revenue has risen 200 per cent. in the last thirty years, viz. :—

	Revenue, Millions £.		Expenditure, Millions £.	
	1865.	1895.	1865.	1895.
Customs . . .	1·4	2·8	Debt . . .	0·4 0·8
Excise . . .	0·6	1·5	Army . . .	1·1 2·4
Taxes, &c. . .	0·8	4·1	Government . .	1·3 5·2
Total . . .	2·8	8·4	Total . . .	2·8 8·4

The revenue for 1895 shows £5,400,000 for Sweden, £3,000,000 for Norway; that is 23 shillings per inhabitant in the first, and 30 shillings in the second, kingdom. Local taxes amount to £3,700,000 in Sweden, and £1,100,000 in Norway. Between national and local taxes the total amount raised yearly by taxation is £7,500,000 in Sweden, £3,100,000 in Norway, from which it appears that the incidence of taxation as compared with earnings is 7 per cent. in Sweden, 8½ per cent. in Norway, against 12 per cent. in France.

Debt.—The total debt of Sweden, national and communal, sums up 26 millions sterling, but the national debt of 16

millions is wholly represented by State railways, so that the real debt is only 10 millions, say 2 per cent. of the national wealth. The net proceeds of the State railways average £360,000, and as their construction imposes a yearly charge on the Treasury of £600,000, the deficit of £240,000, which is met by taxation, is equivalent to 1 shilling per inhabitant. The Norwegian national debt is 7 millions sterling, which is in like manner represented by State railways, which give a net profit of £30,000 yearly, leaving a deficit of £180,000, equivalent to a tax of 22 pence on each inhabitant.

XII

DENMARK

THIS little kingdom was a Power of some importance when the century began : the loss of Norway in 1814, and of the Sleswig-Holstein duchies in 1864, has reduced it to 15,000 square miles, say double the area of Yorkshire, with a population of 2,200,000 : this is equal to 146 to the square mile, against 248 in Germany. Although the cultivated area and the production of food, as compared with population, are much greater than in any other European country, there is a steady emigration to North America, which takes away one-third of the natural increase yearly ; since 1890 the average number of emigrants yearly has been 10,000, and the returns for twenty-five years show that 137,000 proceeded to the United States, and only 9000 to other countries. These returns are evidently below the real number, since the American census of 1890 showed 133,000 Danes, of whom 115,000 were farmers in Iowa and other Western States. There are 75,000 foreigners resident in Denmark, half being Swedes, the other half Germans. If we compare the census of 1890 with that of 1880 we find that in the interval there was an increase of 4 per cent. in rural, 29 per cent. in urban, population. The only city of note is Copenhagen, which, in relation to the rest of the kingdom, is the largest metropolis in the world, since it counts for one-sixth of the total ; its population quadrupled between 1830 and 1890, and now reaches 380,000. The census of 1890 divides the people of Denmark into classes, of which 45 per cent. may be considered workers, viz. :—

	Agriculture.	Manu-fac-tures.	Commerce.	Various.	Total.
Population	880,000	540,000	210,000	540,000	2,170,000
Workers	400,000	245,000	95,000	245,000	985,000

The working-power was as follows, approximately, in millions of foot-tons daily:—

Year.	Hand.	Horse.	Steam.	Total.
1870 . . .	160	1,050	220	1,440
1893 . . .	200	1,240	840	2,280

Steam-power is about 210,000 horse, of which 120,000 in steamboats, 80,000 in locomotives, and 10,000 fixed.

AGRICULTURE

The reform of land-tenure has been attended with the most astonishing transformation. In the eighteenth century Denmark consisted of 614 hovedgards or estates, belonging to the same number of noblemen, ranging from 10,000 acres upwards. On each estate there were two or three hundred tenants, called bondsmen, whom an English traveller described as "dirty, devoid of energy, and not so well fed as Jamaica negroes." At the assembly of Roskilde the nobles declared their right to flog the farmers' wives, and at the same time the peasantry were bought and sold on the estates, like cattle. Reforms projected by Count Struensee were carried out after his death, the first being a law against landlords selling their bondsmen. In 1808 another reform was introduced by Frederic VI., which compelled the nobles to sell farms to their tenants at £6 an acre, and an official return in 1840 showed that in thirty years the peasantry had bought up half the kingdom. Those who had not bought farms were termed huusmen, or tenants, whom the law protected by an enactment that the landlord could neither raise the rent nor evict them so long as they paid it. In 1861 Bishop Mourad's law gave still further facilities to the peasantry for the

purchase of land. The tenure is at present approximately as follows :—

Owners.	Number.	Acrea.	Average.
Nobles	550	1,400,000	2,500
Peasants	71,000	4,300,000	60

The latter are subject to a land-tax of 3 shillings an acre, and the productive area has risen from 5,600,000 acres in 1866 to 7,100,000 in 1890. Climate and soil being equally suited to tillage or grazing, the farmers pay great attention to both, and the crops are much heavier than in most countries, the average yield showing thus :—

	Bushels per Acre.		
	Denmark.	France.	Germany.
Wheat	37	18	23
Oats	34	25	30
Barley	32	20	22

It is doubtless owing to improved method and machinery that the ordinary grain-crop is now 20 per cent., the potato crop 50 per cent., greater than in the decade ending 1880. Reducing all food to a grain denominator, the averages for 1891–93 showed thus :—

	Quantity.	Equiv. in Grain.
Grain, tons	2,100,000	2,100,000
Potatoes, "	450,000	150,000
Meat, "	180,000	1,040,000
Total		3,290,000

The consumption of grain by live-stock is so considerable that, although the crop exceeds 1 ton per inhabitant, there is no surplus for exportation. Down to the year 1884 Denmark used to export about 200,000 tons of grain, but since that year she has been obliged to import largely; in 1893 no less than 190,000 tons. Meantime there is a great surplus of pastoral products, the exports of meat, butter, and eggs amounting to a yearly value of 10 millions sterling. The value of all farm products yearly, and the amount of agricultural capital, are shown approximately as follows :—

Products.	Millions £.	Capital.	Millions £.
Grain . . .	12	Land . . .	205
Other crops . . .	7	Cattle . . .	26
Animal products . . .	16	Sundries . . .	23
Total . . .	35	Total . . .	254

From this it would appear that the annual product is 14 per cent. on capital, and gives an average of 99 shillings per acre, against 96 in Germany; it is equal to £88 for each hand employed, against £48 in Germany and £59 in France; the higher ratio is explained by the fact that the latest and best machinery is more generally in use in Denmark than in any other country of the European continent. The official value of the crops in 1894 was £15,000,000, but this was considerably under the real value: possibly hay and straw were omitted.

FORESTS AND FISHERIES

The forest area is 500,000 acres, the product of which is about £300,000 a year, but the supply of timber is so short that Denmark has to import to the value of a million sterling. The fisheries occupy 15,000 men, who take a yearly value of about £600,000; the export reaches 15,000 tons, value £250,000. Thus the total earnings from forests and fisheries are about a million sterling.

MANUFACTURES

The Danes are so much absorbed in farming pursuits that they can spare little attention for manufactures. An official report in 1880 showed 720 factories, with an aggregate of 10,000 horse-power. Denmark depends almost wholly on imported goods as regards textiles and hardware. The output of distilleries and sugar-mills is little over 1 million sterling. Leather manufactures consume 6000 tons yearly. The approximate value of manufactures in 1894 was as follows:—

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Textiles . . .	£1,400,000	Clothing . . .	£2,800,000
Hardware . . .	600,000	Houses and furn.	2,800,000
Leather . . .	3,000,000	Sundries . . .	3,800,000
Food . . .	5,300,000	Total . . .	19,200,000

There is no mineral of any description, and the consumption of imported coal is only a million tons yearly, or half a ton per inhabitant.

COMMERCE

Foreign trade has quadrupled since 1850, the returns showing thus :—

Year.	Imports, £.	Exports, £.	Total, £.
1850 . . .	4,700,000	8,100,000	7,800,000
1894 . . .	19,400,000	14,600,000	34,000,000

Here, as in all prosperous countries, imports are considerably in excess of exports. The foreign trade of Denmark is relatively large, £14 per inhabitant, as compared with £7 in France and Germany. The countries with which trade is carried on, according to the average of five years ending 1892, are as follow :—

	Millions £ Sterling.			Ratio.
	Imports from.	Exports to.	Total	
Great Britain . . .	4	7	11	35·5
Germany . . .	6	8	9	29·0
Other countries . . .	8	3	11	35·5
Total . . .	18	18	31	100·0

Shipping.—The abolition of the Sound dues, in 1857, appears to have favoured the growth of Danish shipping, which has quintupled in carrying-power in forty years :—

Year.	Tons Register.			Carrying power.
	Sail.	Steam.	Total	
1850 . . .	153,000	... ...	153,000	153,000
1894 . . .	190,000	140,000	330,000	750,000

Denmark is short of shipping, only 55 per cent. of the trade of her ports being done on vessels bearing the Danish flag.

Internal Trade.—This amounts to 74 millions sterling, made up of 35 millions for agriculture, 19 for manufactures, 1 million for forestry and fisheries, and 19 for imports.

Railways.—In 1847 a short line, of 20 miles, was made by a joint-stock company. A system of State railways, 1070 miles in length, was begun in 1862 and completed in 1885. The length of companies' lines is 300, making in all 1370 miles, which have cost 14 millions sterling. Traffic returns per mile compare with those of Sweden thus:—

	Receipts, &c.	Expenses, &c.	Profit, &c.
Denmark	890	727	163
Sweden	531	329	202

Gross earnings per mile run by locomotives are the same as in Sweden, 52 pence. Working expenses are so heavy (82 per cent.) that the net profit is only a trifle over 1½ per cent on capital.

Banking.—The Riks-bank, founded in 1814, has sole right of emission, its issue reaching £4,300,000, say £2 per inhabitant. Joint-stock banks were begun in 1857, and now there are forty of them, making up, with the Riks-bank, a total banking-power of more than 20 millions sterling. Savings-bank deposits amount to 29 millions sterling, or £13 per inhabitant, against £4 in the United Kingdom.

EARNINGS AND WEALTH

The following table shows approximately the earnings and wealth of the Danish people:—

Earnings.	Millions £.	Wealth.	Millions £.
Agricultural	21	Land	205
Manufacturing	10	Cattle, &c. . . .	49
Fisheries, &c. . . .	1	Railways	14
Trade	7	Houses	63
Transport	7	Furniture	31
House-rent	4	Factories	6
Domestics	3	Merchandise	37
Professions, &c. . . .	7	Sundries	101
Total	60	Total	506

The above earnings give an average of £27 per inhabitant, against £25 in Germany and £31 in France. As regards wealth Falbe's estimate in 1885 was 429 millions sterling, which would give £204 per inhabitant, the present ratio, according to the above table, being £230; this would indicate an increase of 52 shillings yearly per inhabitant, against 68 shillings in France. The ratio of wealth per head of the population is higher than in any other country of Continental Europe, except France.

Real Estate.—According to Falbe the value of real estate quadrupled in less than forty years, rising from 65 millions in 1848 to 257 millions in 1885. The valuation of landed properties made in 1818, by order of Frederick VI., amounted to no more than 15 millions; that of 1886 showed an average price of £29 per acre, say 205 millions sterling, or fourteen times as much as in 1818. Nor does the latter valuation appear exaggerated, since the assessed rental in 1886 was 8 millions sterling, which would be in England equivalent to a capital value of 240 millions. As regards house-property the official valuation in 1886 was 48 millions, but Falbe considered the real value was 63 millions. The wealth of Denmark seems to be: real estate 274, personal 232, millions sterling; that is to say, real estate stands for 54 per cent. of the total, as compared with 49 per cent. in France and 46 per cent. in Germany. This would lead us to infer that the price of land in Denmark is relatively too high, doubtless because the kingdom is of such limited dimensions. The average of wealth to population is 46 per cent. higher in Denmark than in Germany, viz., as £230 to £156 per inhabitant.

FINANCES

Denmark lost one-fourth of her revenue when Germany annexed the duchies of Sleswig-Holstein. Nevertheless, her finances have been so carefully administered that the national debt has been reduced by one-third since 1866, at present

amounting to no more than 11 millions sterling. This debt, moreover, is represented by 1000 miles of State railways, so that it would be almost correct to say that Denmark has no debt. Meantime these railways have imposed on the Treasury an obligation of £370,000 a year, while their net product is only £160,000, leaving a deficit of £210,000 to be met by taxation, equal to 2 shillings per inhabitant. The national revenue in 1895 was £3,700,000, of which £2,800,000 was raised by taxation: add to this the local taxes, which will bring up the total to £4,900,000, equivalent to 8½ per cent. of national earnings, or almost the same ratio as in the United Kingdom.

XIII

HOLLAND

THIS kingdom, though not much bigger than Wales, is of considerable importance in the economy of Europe, owing to the thrift, energy, and enlightenment of its people. It is densely inhabited, counting 374 persons to the square mile, against 248 in Germany. The population has nearly doubled since the secession of Belgium, the increase in cities and towns being much greater than in rural districts, viz. :—

	1880.	1890.	Increase per Cent.
Urban	640,000	1,800,000	180
Rural	1,980,000	2,930,000	48
Total	2,620,000	4,730,000	80

The cultivated area being little more than 1 acre per inhabitant, the agricultural resources of the kingdom are insufficient; population is 50 per cent. in excess of what the country could conveniently carry. Yet there is practically no emigration, the people as a rule being in a prosperous condition. Emigration has in late years averaged 5000, that is 1 per thousand of the population yearly, as compared with 8 per thousand in Norway. Emigrants go wholly to the United States, in which country the census of 1890 showed 82,000 Dutch settlers, mostly in the Western Prairies, including 30,000 farmers in Michigan. The number of foreigners living in Holland is 48,000, mostly Germans. No census that has been taken shows the occupations of the people, but that of 1880 showed that there were 840,000 persons residing on

farms. At present the working population may be estimated approximately thus:—

Agricultural	460,000
Commercial, &c.	1,700,000
Total	2,160,000

The working-power of the nation was as follows:—

Year.	Millions of Foot-tons Daily.			Foot-tons per Inhabitant.	
	Hand.	Horse.	Steam.	Total	
1860 . . .	300	750	220	1,270	380
1894 . . .	420	810	2,300	3,530	750

Holland is so deficient in horses that her working-power would be very low but for steam, which has increased 150 per cent. since 1870, viz.:—

Year.	Steam, Horse-power.			Total.
	Fixed.	Locomotive.	Steamboat.	
1870 . . .	30,000	160,000	30,000	220,000
1894 . . .	80,000	320,000	175,000	575,000

The ratio of steam-power to 1000 inhabitants is 120 horse, against 150 in Germany.

AGRICULTURE

One-fourth of the kingdom is below sea-level, protected by dykes or polders, behind which the industrious natives have pastoral and tillage farms. Every inch of the country is drained and irrigated by means of canals, which have a length of 1,900,000 miles; and as the total area is under 8 million acres, there are 420 yards of canal to every acre. The pastures are of such fertility that lean kine imported from Germany grow fat in a few months, often attaining a ton in weight, while the cereal crops are equally prolific. The average yield

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per acre in four years ending 1892 compares with Germany as follows :—

	Bushels per Acre.				
	Wheat.	Oats.	Barley.	Rye.	Mean.
Holland . . .	27	46	40	21	33
Germany . . .	23	30	22	16	23

Thus it appears that 2 acres in Holland produce as much as 3 in Germany. Dairy farming is a most important feature : there are 900,000 milch cows, which give 100,000 tons of butter and cheese yearly, or 250 lbs. per cow, a result unequalled in any other part of the world. The cows are kept in the swampy meadows till November, when they are lodged in sumptuous sheds, ranged along *tête-à-tête*, their tails tied up behind by means of pulleys from the roof. The Dutch, meantime, do not depend wholly on the cows for production of butter, being largely aided by margarine, of which they import 35,000 tons yearly. The quantity of butter and cheese exported in 1893 was 103,000 tons, or a trifle more than the total product of the dairies, without taking account of 30,000 tons for home consumption : the apparent discrepancy is explained by the importation of margarine. Meat-supply exceeds consumption, fat cattle being exported equivalent to 30,000 tons of dead meat. There is, on the other hand, an increasing deficit of grain, for we find that, whereas thirty years ago the importation was only three months' supply, Holland now subsists during five months in the year on foreign grain, viz.:—

Period.	Consumption, Tons.		
	Native.	Imported.	Total.
1861-62 . . .	680,000	220,000	900,000
1890-93 . . .	790,000	650,000	1,440,000

The above consumption may seem excessive, being equal to 12 bushels per inhabitant, but it appears that 40 per cent. is given to cattle, which leaves the balance for human food equivalent to 7 bushels per head of the population. It is to be observed that cows have increased 22 per cent. in number since 1860, and this partly explains why the consumption of

grain is now much greater, compared with population, than it was thirty years ago. Reducing all food to a grain denominator, the production in 1893 was :—

	Quantity.	Equiv. in Grain.
Grain	1,050,000	1,050,000
Potatoes	2,250,000	750,000
Meat	130,000	1,040,000
Total	2,840,000	

The above quantity would hardly suffice for more than two-thirds of the present population. The value of all farm products yearly, and the amount of agricultural capital, are shown approximately as follows :—

Products.	Millions £.	Capital.	Millions £.
Grain	6	Land	240
Other crops	12	Cattle	28
Animal	18	Sundries	27
Total	36	Total	295

The annual product appears to be only 12 per cent. on capital, because land commands an artificial value, much beyond what it could have if the kingdom of Holland were not so diminutive and so densely populated. Meantime it must be admitted that the land, from being so admirably drained and irrigated, is highly productive: the value of products is equal to 142 shillings per acre of productive area, against 92 in France and 96 in the United Kingdom. The product, compared with the number of hands employed in farming, gives an average of £78 each, against £58 in France and £87 in Denmark. There are 167,000 farms, averaging 34 acres and employing 3 hands each: the tenure is as follows :—

Estates.	Number.	Acres.	Average.
Large	7,000	2,270,000	325
Medium	48,000	2,310,000	48
Small	112,000	1,140,000	10
Total	167,000	5,720,000	34

The above area comprises 2,250,000 acres tillage, 2,800,000 pasture, and 670,000 unproductive. A farm of 50 acres is preferred, carrying 15 cows, 20 sheep, and a horse, and requiring 2 farm-servants. An official return for 1892 shows that 3 million acres (say half the kingdom) are cultivated by the owners, the rest by meejers or tenants. Lands held by meejers descend by right of primogeniture, and the landlord can neither disturb the meejer nor raise his rent. If we divide the agricultural wealth of Holland among the number of farms, it gives £1800 to each, as compared with £880 in France. Land-tax averages 4 shillings an acre, and is in all cases paid by the owner of the estate. The condition of the rural population is prosperous.

FORESTS AND FISHERIES

There are 600,000 acres of forest, the product of which is about £300,000 yearly. Holland has to import 2 million tons of timber yearly, value £2,500,000. The fisheries were of such importance in times gone by that it used to be said Amsterdam was built of herring-bones. Injudicious taxes have blighted the industry, and now the number of fishing-boats is reduced to 5200, manned by 17,000 fishermen, whose take does not reach in value 1 million sterling.

MANUFACTURES

Holland has 4010 factories, including 520 distilleries, employing steam to an aggregate of 80,000 horse-power. The mills consume 52,000 tons of fibre, which is three times the weight consumed by them thirty years ago. Hardware is almost wholly imported, the value of goods made in the country hardly reaching one-sixth of what is used. The consumption of leather reaches 10,000 tons, including 4000

made from imported hides. The manufacture of gin reaches 3 millions, paper 2 millions, sterling. The value of manufactures in 1894 was approximately as follows :—

Textiles . . .	£8,100,000	Clothing . . .	£4,900,000
Hardware . . .	1,200,000	Houses & furniture	7,300,000
Leather . . .	5,000,000	Sundries . . .	9,900,000
Food . . .	12,600,000	Total . . .	49,000,000

The only mineral wealth is a small coal-field in Limburg, which produces 70,000 tons yearly.

COMMERCE

The Dutch are a nation of merchants, and their foreign trade averages £45 per inhabitant, as compared with £17 in the United Kingdom. As the nation has been generally prosperous we find that imports have always exceeded exports :—

Year.	Millions £ Sterling.			£ per Inhabitant.
	Imports.	Exports.	Total.	
1843 . . .	15	11	26	9
1870 . . .	39	32	71	19
1894 . . .	121	93	214	45

Trade returns for five years to December 1892 give the following averages :—

	Millions £ Sterling.			Ratio.
	Imports from.	Exports to.	Total.	
Germany . . .	22	44	66	33·0
Great Britain . . .	24	25	49	24·5
Belgium . . .	15	12	27	13·5
Dutch Colonies . . .	14	5	19	9·5
Other countries . . .	33	6	39	19·5
Total . . .	108	92	200	100·0

Shipping.—Holland, which had for so long the carrying-trade of the world, is now so low in shipping that only 30 per cent. of vessels entering Dutch ports carry the national flag. The registered tonnage of Dutch shipping is little more than

it was fifty years ago, but as steamers have largely taken the place of sailing-vessels the carrying-power has nearly trebled :—

Year.	Tons Register.			Carrying-power.
	Steam.	Sail.	Total.	
1840 :	5,000	255,000	260,000	275,000
1894 :	180,000	110,000	290,000	830,000

Internal Trade.—This amounts approximately to 207 millions sterling, of which imports figure for 121, agricultural products 36, forestry and fisheries 1 million, and manufactures 49. It gives a ratio of £43 per inhabitant, against £30 in France.

Railways.—A short line of 10 miles was made in 1839. The Government began to make a system of State railways in 1863, which was completed in 1890, with a length of 890 miles, at a cost of 22 millions sterling : these lines give a net profit of $2\frac{1}{2}$ per cent. on capital, leaving a deficit which is met by taxation, say £80,000, equal to 4 pence per inhabitant. There are also 1430 miles of companies' lines, the cost of which averaged only £17,000 a mile, or two-thirds of the cost of State lines. Taking in the aggregate the traffic of all Dutch lines, the averages per mile compare with those of Germany as follows :—

	Receipts, £.	Expenses, £.	Profit, £.
Holland :	1,340	740	600
Germany :	2,564	1,664	900

The return on Dutch lines averaged 3 per cent. on cost of construction.

Canals and Roads.—Much of the prosperity of Holland is due to her facilities for internal traffic, which are unrivalled. There are 2700 miles of navigable waterways, 17,600 of admirable high-roads, made of hard-burnt klinkers, and 2300 of railway, in all 22,600 miles, or 2 miles of route for every square mile of territory. The Dutch have, moreover, spent 300 millions sterling in construction of the polders or sea-dykes.

Banking.—The visible banking-power in 1894 was only 25 millions sterling, nine-tenths of which corresponded to the Netherlands Bank, founded in 1814 : this bank has an issue

of 17 millions sterling, minimum bullion reserve 40 per cent. So many Dutch capitalists lend money that the real banking-power is probably double what it appears, or about 50 millions sterling. The amount of coin in use is officially estimated at 18 millions sterling.

EARNINGS AND WEALTH

The earnings and wealth of the Dutch people are approximately as follows:—

Earnings.	Millions £.	Wealth.	Millions £.
Agricultural . . .	22	Land . . .	240
Manufacturing . . .	25	Cattle . . .	28
Forests and fisheries . . .	1	Implements . . .	27
Trade . . .	21	Railways . . .	46
Transport . . .	22	Houses . . .	162
House-rent . . .	10	Furniture . . .	81
Domestics . . .	7	Merchandise . . .	104
Public service . . .	5	Factories . . .	16
Professions . . .	11	Sundries . . .	176
Total . . .	124	Total . . .	880

Earnings.—The above amount gives an average of £26 per inhabitant, against £25 in Germany.

Wealth.—The official estimate of national wealth in 1894 was 880 millions sterling, which gives the high ratio of £183 per inhabitant, being £27 more than in Germany. Real estate constitutes 47 per cent. of the total. The assessed land rental, as we have seen, is £8,020,000, that of houses £9,730,000, according to which the capital value would be: of the first 240, of the second 162, together 402 millions sterling. Leaving aside uncultivated land as valueless, the cultivated area of 5 million acres stands for £48 an acre, as compared with £44 in England, yet this is apparently the normal value in Holland, for we find that in the Government Message of 1894 for emptying the Zuyder Zee the land to be recovered is valued at £56 an acre.

FINANCES

Before the secession of Belgium in 1830 the united revenue of the whole kingdom was £6,400,000. In 1840 the revenue of Holland was £4,700,000, from which time it rose rapidly to £9,600,000 in 1866, but has remained nearly stationary during the last thirty years. The budgets of 1866 and 1895 compare thus:—

	Revenue, Millions £.		Expenditure, Millions £.	
	1866.	1895.	1866.	1895.
Excise . . .	2·0	3·5	Debt . . .	3·0
Income-tax . . .	1·4	2·9	Army . . .	1·7
Sundries . . .	6·2	4·3	Government . . .	4·1
Total . . .	<u>9·6</u>	<u>10·7</u>	Total . . .	<u>8·8</u>
				11·4

The amount of revenue raised by taxation is £9,200,000, to which adding £6,900,000 for local taxes, the total becomes 16 millions sterling, or 67 shillings per inhabitant, the highest ratio per head in Europe. The incidence of taxation is equal to 12½ per cent. of national earnings, as compared with 8½ in the United Kingdom. The debt is nominally 92 millions, but this includes 22 millions for State railways, leaving the real debt 70 millions sterling, say 8½ per cent. of national wealth, against 8 in the United Kingdom.

XIV

BELGIUM

THIS kingdom is even smaller than Holland, its area not exceeding 11,400 square miles, or one-third of that of Ireland. Although the most densely populated country in the world, its career, since its separation from Holland in 1830, has been one of remarkable prosperity. The population has risen nearly 50 per cent. in half a century, viz. :—

Year.	Inhabitants.	Per Sq. Mile.
1846	4,340,000	380
1893	6,260,000	550

The agricultural resources suffice to maintain no more than 4 million persons, or two-thirds of the population.

If we compare the figures for 1893 with those for 1830 we see that the principal towns have increased in population 240 per cent., the rest of Belgium 40 per cent., from which it would appear that urban population has been growing six times as fast as rural, owing to the influx of peasantry into the towns. Emigration is insignificant, about 20,000 yearly: there are 460,000 Belgians settled in France, 25,000 in the United States. The occupations of the people, according to the last census, are so confused as to be unintelligible (see Appendix), but when properly classified give the following result:—

	Men.	Women.	Total.
Agriculture . . .	480,000	240,000	720,000
Manufactures . . .	1,010,000	375,000	1,385,000
Commerce, &c. . .	570,000	265,000	835,000
Total . . .	2,060,000	880,000	2,940,000

The working-power of the nation was as follows :—

Year.	Millions of Foot-tons Daily.				Foot-tons per inhabitant.
	Hand.	Horse.	Steam.	Total.	
1860	420	780	680	1,880	400
1893	560	810	3,800	5,170	830

Steam-power has increased 24-fold in the last half-century, viz. :—

Year.	Steam, Horse-power.				Total.
	Fixed.	Locomotives.	Steam-boats.		
1840	30,000	10,000	...		40,000
1860	100,000	65,000	5,000		170,000
1893	380,000	500,000	70,000		950,000

The ratio of steam-power to population is a little higher than in Germany, being 154 horse to 1000 inhabitants and 150, respectively.

AGRICULTURE

Belgium is a country of kitchen-gardens, with a cultivated area of $5\frac{1}{2}$ million acres, or 10 per cent. more than in Holland : the farms are very productive, but so small that the amount of labour expended is out of all proportion to the result. There are, as we have seen, 720,000 persons employed, who cultivate $7\frac{1}{2}$ acres each ; the same number of hands in the Western States of America would produce thrice as much food. The peasantry are laborious, but ill-fed, subsisting on rye-bread, buttermilk, and potatoes, with some bacon on Sundays. Reducing all food to a grain denominator, the production in the years 1890–93 averaged thus :—

Grain, tons	Quantity.	Equiv. in Grain.
Potatoes, "	3,600,000	1,200,000
Meat "	110,000	880,000
Total		3,930,000

Population has increased so much that Belgium has now to import grain for five months' supply, whereas thirty years ago she only depended during two months in the year on

foreign grain. If we deduct what is required for seed, the quantity of grain consumed yearly is shown as follows:—

Period.	Consumption, Tons.		
	Native.	Imported.	Total.
1860-62 . . .	1,400,000	260,000	1,660,000
1890-93 . . .	1,650,000	1,130,000	2,780,000

There is also a deficit in meat supply, the importation, including live cattle, being equivalent to 50,000 tons of dead meat, or four months' supply. Thus it comes to pass that Belgium pays yearly 9 millions sterling for imported food, say 30 shillings per head of population. In 1880 an official report showed that the average value, during the preceding ten years, of all farm products was 66 millions sterling, but prices have since fallen, and the average for the years 1890-93 was not more than 44 millions. The value of products and the amount of agricultural capital are shown approximately as follows:—

Products.	Millions £.	Capital.	Millions £.
Grain . . .	12	Land . . .	300
Other crops . . .	17	Cattle . . .	22
Animal . . .	15	Sundries . . .	32
Total . . .	44	Total . . .	354

The product on capital is 12 per cent., the same as in Holland. The average product per acre is 160 shillings, the highest obtained in any country of the world, but the condition of the farmers is not so prosperous as in Holland or Denmark, the farms being too small. Moreover, only 40 per cent. of the cultivated area is in the hands of owners, the rest being let to tenants at rents ranging from 20 to 40 shillings an acre. An official report shows that rented farms cover 3,200,000, and farms in hand 2,300,000, acres, the latter for the most part under 12 acres. The latest statement of tenure was in 1880, viz.:—

Class.	Farms.	Acres.	Average.
Large	15,600	2,450,000	160
Medium	74,200	1,900,000	26
Small	226,000	1,150,000	5
Total	315,800	5,500,000	17

The price of land is much too high, the Government valuation giving a medium of £55 per acre, as compared with £33 in France. Land-tax averages 6 shillings an acre. The yearly product of agriculture gives an average of £61 to each hand employed, against £58 in France and £78 in Holland.

FORESTS AND FISHERIES

There is no country in which forests are so productive as Belgium, owing to the special care that is given to them, the average yield being 14 shillings per acre, viz. :—

Forests.	Acres.	Product, &c.	Shillings per Acre.
Public	440,000	250,000	11
Private	770,000	620,000	16
Total	1,210,000	870,000	14

Nevertheless the country is so populous that Belgium has to import 800,000 tons of timber yearly.

The fisheries are insignificant, employing only 300 boats. The importation of fish reaches 50,000 tons, from Norway and other countries, value £900,000 yearly.

MANUFACTURES

Belgium is now one of the great manufacturing nations of Europe, her rise in this branch of industry during the last half-century being very remarkable. The total of her steam-power in factories and mines in 1830, the year of her emancipation from the yoke of Holland, was only 20,000 horse-power ; in 1887 it reached 340,000. An official report in 1880 showed the yearly output of manufactures to be 81 millions sterling ; the amount is at present approximately 99 millions.

Textiles.—The horse-power used in textile mills rose from 4300 in 1846 to 33,000 in 1880. The weight of fibre consumed in 1894 was 120,000 tons, as compared with 48,000 in 1862, so that it may be said textile industry has nearly trebled in thirty years. The output is about 17 millions sterling, of which almost one-fourth is exported. The consumption of

fibre and the value of goods produced are shown approximately as follows :—

	Fibre, Tons.	Output, £.
Cotton	37,000	5,200,000
Wool	20,000	5,300,000
Flax, &c.	53,000	5,400,000
Silk	300	900,000
Total	110,300	16,800,000

The value of linen and woollen exports reaches 4 millions sterling—not all manufactured goods, but chiefly yarn.

Hardware.—The production of iron has multiplied 22-fold since 1830, and now reaches 770,000 tons, made almost wholly from Luxemburg ore, which gives 40 per cent. of iron. The production is equal to 270 lbs. per inhabitant, a ratio surpassed only in Great Britain. The Belgians are much indebted to Mr. John Cockerill, who introduced in 1816 the system of smelting with coke, and established at Seraing one of the finest ironworks in Europe. In 1894 there were 420 foundries and ironworks, consuming yearly 500,000 tons of iron and 400,000 of steel. Liège is become one of the great Continental factories, turning out arms to the value of a million sterling per annum. The output of all iron and steel wares is about 13 millions sterling. There are copper manufactures, consuming about 7000 tons of that metal, besides those of zinc, consuming 15,000 tons. Total hardware manufactures, 19 millions sterling.

Leather.—The consumption averages 12,000 tons, more than one-half made from imported hides, and the value of goods produced is 6 millions sterling.

Liquor.—There are 1450 breweries and distilleries, producing 5 million barrels of beer and 13 million gallons of spirits, together worth 12 millions. All is used for home consumption, which averages 2 gallons of spirits and 31 of beer per inhabitant.

Miscellaneous.—The production of sugar has quadrupled in twenty years : there are 160 mills, turning out 270,000 tons, valued at 4 millions, one-half being exported, and the home

consumption averaging 40 lbs. per inhabitant. Glass factories have an output of 4 millions sterling, one-half of which is exported. Paper and printing represent an equal amount.

Summary.—The approximate value of all manufactures was as follows :—

		Millions £ Sterling.		
		1860.	1880.	1894.
Textiles	.	10	14	17
Hardware	:	7	14	19
Leather	.	4	5	6
Food	.	22	32	36
Clothing	.	7	10	10
Houses and furniture	.	4	5	6
Sundries	.	11	20	24
Total	.	65	100	118

The output in 1894 gives an average of £93 per operative, against £106 in the United Kingdom.

MINERALS

Coal is the most important mineral, the production having multiplied ten-fold since 1836, and at present reaching 20 million tons, nearly $3\frac{1}{2}$ tons per inhabitant—the highest ratio in any country except Great Britain. The production and consumption have more than doubled in thirty years :—

Year.	Tons of Coal.	
	Production.	Consumption.
1860	9,600,000	6,100,000
1894	20,500,000	16,100,000

There are 124 mines, employing 117,000 colliers, and the quantity raised averages 167 tons per miner, against 126 in 1850 : the coal is valued at 8 shillings, the net profit being only 3 pence, per ton. The output per miner is only two-thirds of what it is in Great Britain, but perhaps the great depth of Belgian coal-mines is the reason ; the Lambert, for instance, is 3500 feet deep, whereas the deepest in Great Britain, the Rosebridge, is only 2500. Zinc mines give half

a million tons of ore, from which are obtained 85,000 tons of metal, and of this quantity only one-fifth is kept for home use, the rest being exported. The total value of minerals (including the product of stone quarries) is 10 millions sterling per annum.

COMMERCE

Foreign trade has multiplied nearly six-fold since 1850, showing as follows :—

Year.	Millions £ Sterling.		
	Imports.	Exports.	Total.
1850	10	11	21
1870	37	28	65
1894	63	52	115

In Belgium, as in all prosperous countries, imports greatly exceed exports, and it is the more remarkable because Belgium is so destitute of shipping that she has to pay other nations to do the carrying-trade for her. The averages for five years ending 1892 show thus :—

	Millions £ Sterling.			
	Imports from.	Exports to.	Total.	Ratio.
France	12	14	26	21·5
Great Britain	8	10	18	14·8
Germany	7	11	18	14·8
Holland	8	8	16	13·2
Other countries	30	13	43	35·7
Total	65	56	121	100·0

Foreign trade averages £19 per inhabitant, against £17 in the United Kingdom.

Shipping.—The merchant navy is insignificant, and consists wholly of steamers, with a nominal register of 75,000 tons, and 300,000 carrying-power. Port-entries show 20 per cent. Belgian, 40 British, and 40 of other flags.

Internal Trade.—This comprises agriculture 44, manufactures 118, minerals &c., 11, and imports 63, in all 236 millions sterling, equal to £38 per inhabitant, as compared with £41 in the United Kingdom and £30 in France.

Railways.—The second line opened on the Continent was that from Brussels to Malines, 17 miles, in 1835, and in the ensuing fifty years nearly 2000 miles of State railways were constructed at a cost of 58 millions sterling. At present the total length of lines is 2820 miles, including 800 miles belonging to companies : the outlay has been 75 millions, or £26,500 per mile. Traffic returns compare with those of Holland, per mile, as follows :—

	Receipts, £.	Expenses, £.	Profit, £.
Belgium . . .	2,566	1,467	1,099
Holland . . .	1,340	740	600

Belgian lines yield nearly 4½ per cent. on capital, Dutch only 3 per cent. Between railways, high-roads, and navigable water-ways, Belgium has 9500 miles of route.

Banking.—The banking-power is about 50 millions sterling, represented by fifty-four banks. The Bank of Belgium, founded in 1850, has sole right of issue, and its circulation amounts to 18 millions sterling : the other banks, between capital and deposits, show an aggregate power of 24 millions. These are irrespective of savings-banks, which hold 16 millions of deposits. The amount of coin in use is 22 millions sterling, or 70 shillings per head, whereas in the United Kingdom the ratio is only 55 shillings.

EARNINGS AND WEALTH

The earnings and wealth of the Belgian people are approximately as follows :—

Earnings.	Millions £.	Capital.	Millions £.
Agricultural . . .	26	Land	300
Manufacturing . . .	59	Cattle	22
Mining, &c. . . .	11	Implements, &c. . . .	32
Trade	24	Railways	75
Transport	25	Factories	39
House-rent	8	Houses	136
Domestics	5	Furniture	68
Public service . . .	7	Merchandise	118
Professions	16	Sundries	198
Total	181	Total	988

Earnings.—The above gives a ratio of £28 annual earnings to each inhabitant, against £26 in Holland and £25 in Germany.

Wealth.—Massalski estimates the wealth of Belgium at 1180, Graux at 1360, millions sterling, but they are certainly over the mark. Probate returns for six years show that the amount of property which paid succession and legacy dues was equal to £151 for each person who died. Applying the same ratio to the living we have a total of 966 millions sterling, or 2 per cent. less than the estimate on preceding page.

Real Estate.—Minister Malou's estimate is 300 millions for land and 136 for houses, together 436 millions sterling, and if we include factories the total of real estate will be 48 per cent. of national wealth. Malou estimates the house-property at twenty-three times the assessed rental, which would be about eighteen times the annual renting value.

Average.—The average of wealth per head is £154, as compared with £156 in Germany and £183 in Holland.

FINANCES

The revenue after secession from Holland in 1830 was under 4 millions sterling; it showed an increase of nearly 70 per cent. in 1865, and since the latter year it has more than doubled. The budgets for 1865 and 1895 compare thus:—

	Revenue (000's omitted)		Expenditure (000's omitted)	
	1865, £.	1895, £.	1865, £.	1895, £.
Customs . . .	500	1,000	Debt . . .	1,600 4,400
Excise . . .	1,100	1,700	Army . . .	1,400 1,900
Railways . . .	1,800	5,800	P. Works . . .	1,200 700
Taxes . . .	1,200	4,300	Communes . . .	600 1,400
Sundries . . .	2,300	1,500	Government . . .	1,600 5,900
Total . . .	6,400	14,300	Total . . .	6,400 14,300

More than one-third of the revenue arises from earnings of State railways, which give a net annual profit of £2,300,000,

say 4 per cent. on cost, so that they involve no burthen on the treasury beyond that of sinking-fund. The amount of revenue raised by taxation is 7 millions, and of local taxes 6, making in all 13 millions sterling, which is equal to 7 per cent. of national earnings, against 8½ per cent. in the United Kingdom.

Debt.—This is nominally 88 millions, of which 58 millions correspond to State railways, which give, as shown above, a net profit that fully covers the interest on the loans for their construction. The real debt is therefore 30 millions sterling, or 3 per cent. of national wealth.

XV

SWITZERLAND

THIS little republic, which is half the size of Portugal, affords a striking example of what an industrious and intelligent people can do. It has no sea-coast, no navigable rivers, no mineral wealth, no large cities ; three-fourths of its area are occupied by Alpine ranges, and the remainder is not sufficient to raise food for its population. Nevertheless the country is prosperous, and the condition of the people enviable. Some of the Cantons speak German, others French or Italian ; some are Roman Catholic, others Protestant, but the wheels of government work smoothly, the people are friendly and patriotic, forming, as it were, one family. The population is 3,050,000, or 197 per square mile, as compared with 190 in France. The number of emigrants is about 8000 yearly, almost all to the United States, the American census of 1890 showing 104,000 Swiss settlers, including 70,000 farmers in the Western States. On the other hand, Switzerland has attracted a large number of foreign residents, at last census 230,000, of whom one-half were Germans, one-fourth French. Urban population has increased 320, rural only 30, per cent. since 1830.

The occupations of the people, according to the census of 1888, showed, as in Belgium, a larger number engaged in manufactures than in agriculture, viz.:—

	Agriculture.	Manufactures.	Commerce.	Various.	Total.
Men .	400,000	325,000	100,000	35,000	860,000
Women .	90,000	195,000	40,000	25,000	350,000
Total .	490,000	520,000	140,000	60,000	1,210,000

Working-power has more than doubled since 1860, as shown thus :—

Year.	Millions of Foot-tons Daily.				Foot-tons per Inhabitant.
	Hand.	Horse.	Steam.	Total.	
1860 . . .	220	270	480	970	400
1893 . . .	270	300	1,520	2,090	700

Steam-power at present reaches 380,000 horse, of which 40,000 in factories, the rest in railway locomotives. Owing to the mountainous character of the country the locomotives are of extraordinary power, averaging 420 horse. The above table of energy, meantime, does not express the full working-power, because Switzerland has a valuable contingent of force in 2700 mountain-streams, some of which supply the place of steam, the motive-power in factories being about 160,000 horse, three-fourths water. If this be taken into account the energy of Switzerland will be about 2500 millions of foot-tons daily, or 830 per inhabitant, the same ratio as in Belgium.

AGRICULTURE

The productive area is only 5,200,000 acres, of which three-fourths are used for pasture. With so limited an area it is not surprising that the production of grain suffices only for four months, of meat for eight months, in the year. Deducting grain used for seed the food-supply is as follows :—

	Grain, tons.	Meat, tons.	Wine, gallons.
Native . . .	260,000	80,000	22,000,000
Imported . . .	490,000	40,000	24,000,000
Consumption .	750,000	120,000	46,000,000

Switzerland pays 8 millions sterling yearly for imported food, but gets back one-third of this sum in payment for 40,000 tons of cheese and condensed milk, which she exports, dairy-farming being a special industry in some of the Cantons. The value of products and amount of agricultural capital are approximately as follows :—

SWITZERLAND

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Products.	Millions £.	Capital.	Millions £.
Grain . . .	2	Land . . .	138
Other crops . . .	7	Cattle . . .	18
Animal . . .	11	Sundries . . .	16
Total . . .	20	Total . . .	172

The product is 12 per cent. on capital, as compared with $13\frac{1}{2}$ in France and $16\frac{1}{2}$ in Germany. The official valuation of farm products in 1890 was £20,200,000. The land is divided among 300,000 farms, averaging 17 acres, two-thirds cultivated, one-third pasture; the average value of each farm is £490, against £880 in France. The product is equal to £41 per hand, as compared with £61 in Belgium and £58 in France.

FORESTS AND FISHERIES

The forest area is 2,100,000 acres, in which about 20,000 wood-cutters find employment, the product in timber and fire-wood being of the approximate value of 1 million sterling. The supply of timber is short, being supplemented by 100,000 tons imported yearly. There are no fisheries of any importance.

MANUFACTURES

In 1894 Switzerland had 4600 factories, employing 150,000 hands, besides 420,000 artisans, producing altogether an annual output of 40 millions sterling, equal to £78 per operative, nearly 40 per cent. of the hands being women.

Textiles.—There are 1900 mills, with 90,000 operatives, consuming 38,000 tons of fibre, as compared with 14,000 tons in the years 1880–82: this branch of industry has, therefore, increased 170 per cent. in twelve years, the output reaching 12 millions sterling, of which two-thirds are exported, viz.:—

	Silks.	Cottons, &c.	Total.
Output . . .	£6,400,000	£5,400,000	£11,800,000
Export . . .	5,600,000	2,300,000	7,900,000

Woollen mills do not produce enough for home consumption, and goods of this class are imported yearly up to a million sterling.

Hardware.—About two-thirds of the wares used are made in the country, the annual consumption of iron and steel in 550 foundries and ironworks reaching 180,000 tons.

Miscellaneous.—Geneva, according to Prof. Zehden, has 40,000 watchmakers, who turn out 3 million watches yearly : the annual export of watches is 4 millions sterling. There are 4000 tanners at Zurich and Lucerne, and leather manufacturers are of importance.

The approximate value of manufactures in 1894 was as follows :—

Textiles . . .	£11,800,000	Clothing . . .	£4,300,000
Hardware . . .	2,400,000	Houses and furn. . .	3,600,000
Leather . . .	3,200,000	Sundries . . .	8,200,000
Food . . .	7,300,000	Total . . .	40,800,000

The mineral products are trifling, viz., 20,000 tons of coal, 30,000 of salt, yearly : there are some good quarries of slate and marble.

COMMERCE

Forty years ago this was a poor country, and her exports exceeded imports : at present the position is reversed, viz. :—

Year.	Imports, £.	Exports, £.	Total, £.
1855 . . .	14,400,000	19,600,000	34,000,000
1894 . . .	35,200,000	26,900,000	62,100,000

The trade of five years gives the following averages :—

	<u>Millions & Sterling.</u>			
	Imports from.	Exports to.	Total.	Ratio.
Germany . . .	11	7	18	27·3
France . . .	10	5	15	22·7
Italy . . .	5	2	7	10·6
Great Britain . . .	2	4	6	9·1
Other countries . . .	10	10	20	30·3
Total . . .	38	28	66	100·0

Internal Trade.—This amounts to 97 millions, of which agriculture stands for 20, manufactures 41, forestry 1 million, and imports 35 millions, sterling; this is equal to £32 per inhabitant, against £30 in France and £38 in Belgium.

Railways.—Notwithstanding natural difficulties there is a complete network of railways, 2270 miles in length, which have cost 44 millions sterling. The first line was opened in 1844. Traffic compares with German lines, per mile, as follows:—

	Receipts, £.	Expenses, £.	Profit, £.
Swiss	1,857	1,107	750
German	2,564	1,664	900

Swiss lines give almost 4 per cent. net profit on cost of construction, and all belong to companies.

Banks.—Switzerland has the largest banking-power compared with population of any country of Continental Europe, viz., 36 millions, or £12 per head, as compared with £8 per head in France. There are thirty-five banks, all with right of issue, which is a great facility to trade; these banks in December 1893 showed an aggregate of discounts, or bills in portfolio, amounting to £35,800,000; deposits 23 millions sterling, issue 7 millions.

EARNINGS AND WEALTH

The earnings and wealth of the Swiss people are approximately as follows:—

Earnings.	Millions £.	Wealth.	Millions £.
Agricultural	12	Land	138
Manufacturing	20	Cattle, &c. . . .	34
Forests	1	Houses	77
Trade	10	Furniture	38
Transport	10	Railways	44
House-rent	5	Merchandise	49
Domestics	3	Factories	14
Public service	3	Sundries	98
Professions	6	Total	492
Total	70		

Earnings.—The above earnings show an average of £23 per inhabitant, as compared with £31 in France and £25 in Germany.

Real Estate.—If we capitalise the assessed rental of Switzerland in 1880, which was £7,640,000, it may be said to represent £229,000,000. According to Sir F. Adams the value of land was £138,400,000. This would leave a balance of £90,600,000 for houses and factories. The Canton of Berne, which is said to possess one-fourth of the wealth of Switzerland, showed in 1882 a total of real estate amounting to £59,000,000. It will be seen that real estate constitutes 47 per cent. of the wealth of the Swiss Confederation, the ratio being 48 per cent. in Belgium and 46 in Germany.

Land.—The value of cultivated land appears to average £35 per acre, against £33 in France: the figures are approximately as follows:—

		Acres.	£ Sterling.
Cultivated	.	3,100,000	108,400,000
Pasture, forest	.	3,700,000	30,000,000
Total	.	6,800,000	138,400,000

Houses.—Excluding factories the value of houses, as shown above, is £78,600,000, which gives a ratio of £26 per inhabitant, against £31 in Germany and £48 in France. No country is richer in hotels, of which there are 7640, valued at £20,500,000, containing 82,000 beds, employing 27,000 waiters, receiving 1,230,000 guests, who paid for board and lodging £4,400,000. Thus the magnificent lake and Alpine scenery is a valuable source of income. It appears from the above statement of the “Schweizer Verein” that hotels stand for one-fourth of the house-property of Switzerland.

Average Wealth.—The wealth of the nation shows an average of £16 per inhabitant, which is £8 more than the average in Germany; the condition of the Swiss people is, moreover, much better than that of the German. In Switzerland there

are neither great fortunes nor poverty : what Goldsmith said of the Swiss 150 years ago is still true :—

“Though poor the peasant's hut, his feasts though small,
He sees his little lot the lot of all.”

Sir Francis Adams says : “It would be difficult in Europe to find a more industrious and contented people than the Swiss.”

FINANCES

The Swiss republic is in reality a confederacy of twenty-two diminutive republics, each Canton being autonomous, and all held together for mutual protection and external interests. National or Federal revenue does not exceed 3 millions sterling, or £1 per inhabitant, but if we include the budgets of the Cantons the whole will amount to £6,300,000, viz. :—

<i>Revenue.</i>	<i>Expenditure.</i>
Customs . . . £1,600,000	Debt . . . £ 500,000
Taxes . . . 1,500,000	Army . . . 900,000
Cantonal do. . . 3,200,000	Government . . . 4,900,000
Total . . . £6,300,000	Total . . . £6,300,000

The amount raised by taxation is £5,300,000, equal to $7\frac{1}{2}$ per cent. of national earnings, against $8\frac{1}{2}$ per cent. in Great Britain.

Debt.—The total of Federal and Cantonal debts makes up 13 millions sterling, say 3 per cent. of national wealth.

XVI

THE DANUBIAN STATES

THESE three States, recently detached from the Ottoman Empire, might be constituted into a compact kingdom of some importance, but for the jealousy of the principal European powers. They form one continuous territory, watered by the Danube for more than 600 miles, from Belgrade to the Black Sea, with an area equal to that of Italy, viz. :—

	Sq. Miles.	Population.	Per Sq. Mile.
Roumania . . .	50,600	5,800,000	115
Serbia . . .	18,700	2,300,000	123
Bulgaria . . .	36,900	3,300,000	90
Total . . .	106,200	11,400,000	108

The population is almost wholly rural, the only towns of importance being Bucharest, Jassy, Belgrade, and Sofia, collectively counting 410,000 souls. There is a great mixture of races, Slavonic predominating, the rest consisting of Greeks, Jews, Gypsies, and Turks.

According to Zehden the agricultural element forms nearly three-fourths of the population. As persons in active work are in most countries about 45 per cent. of the number of inhabitants, the actual workers may be put down approximately thus :—

Occupation.	Roumania.	Serbia.	Bulgaria.	Total.
Agricultural . .	1,900,000	730,000	1,050,000	3,680,000
Various . .	710,000	300,000	440,000	1,450,000
Total . .	2,610,000	1,030,000	1,490,000	5,130,000
		566		

The working-power of the three States is as follows :—

	Millions of Foot-tons Daily.				Foot-tons per Inhab.
	Hand.	Horse.	Steam.	Total.	
Roumania .	520	1,770	480	2,770	470
Servia .	200	490	100	790	350
Bulgaria .	300	600	160	1,060	320
Total .	1,020	2,860	740	4,620	410

This is a very low ratio of energy, owing to the fact that the total steam-power is less than 200,000 horse, and this consists almost wholly of railway locomotives.

AGRICULTURE

The condition of all three States is similar : in Roumania one-third, in Servia one-half, and in Bulgaria two-fifths, of all the lands have been broken up into small farms and given to the emancipated serfs, subject to a land-tax of 2 shillings an acre. The tenure of these peasant farms is as follows :—

	Farms.	Acres.	Average.
Roumania .	600,000	9,000,000	15
Servia .	300,000	6,000,000	20
Bulgaria .	400,000	10,000,000	25

The farms are small, the method of agriculture is rude, but the soil is very fertile ; the quantity of food raised is much in excess of what is needed for the home consumption, and there is always a large amount for exportation. There is, meantime, a great waste of labour, the number of hands employed being nearly half that which is in the United States of America, and the result nowise comparable. The cultivated area might be much extended.

	Acres.		
	Cultivated.	Uncultivated.	Total.
Roumania .	11,700,000	20,700,000	32,400,000
Servia .	¹ 4,900,000	7,300,000	12,200,000
Bulgaria .	6,500,000	17,100,000	23,600,000
Total .	23,100,000	45,100,000	68,200,000

¹ The official return for Servia shews 6,100,000 acres cultivated, but is unreliable.

The collective area under grain is 17,800,000 acres, under other crops 5,300,000, and the remaining area comprises 20,900,000 of pasture and 24,200,000 of forest or wilderness. The ordinary grain-crop sums up 6½ million tons, of which three-fifths are retained for home consumption, and two-fifths, say 2,500,000 tons, are exported. Reducing all food to a grain denominator, the production is as follows :—

		Quantity.	Equivalent in Grain.
Grain, tons	6,900,000	6,900,000	
Meat, „	400,000	3,200,000	
Wine, gallons	120,000,000	1,200,000	
Total		11,300,000	

This is equivalent to 1 ton of grain per inhabitant, or 2½ tons per hand employed, which cannot be considered a satisfactory result. The production in the three States is ordinarily as follows :—

	Grain, Tons	Meat, Tons.	Wine, Gallons
Roumania	4,200,000	200,000	30,000,000
Servia	900,000	100,000	60,000,000
Bulgaria	1,800,000	100,000	30,000,000
Total	6,900,000	400,000	120,000,000

The aggregate grain-crop comprises 2,500,000 tons of wheat, 2,500,000 of maize, and the rest of barley, rye, &c.; representing a value of 38 millions sterling, exports amounting to 13 millions. Not more than 30 million gallons of wine are exported, home consumption averaging 10 gallons per inhabitant. The production of meat comprises 170,000 tons of beef, 150,000 mutton, and 80,000 pork, and the exportation of cattle is small, the home consumption of meat averaging 75 lbs. per inhabitant. Fruit is largely cultivated in Servia, which country has 180,000 acres under orchards, producing particularly a famous plum called Slivovitz; of this there are 20,000 tons exported yearly, to make brandy. The aggregate area under vineyards in the three States is 1,100,000 acres, the vintage

averaging 130 gallons per acre. The value of all products is approximately as follows:—

	Millions £ Sterling.			
	Roumania.	Servia.	Bulgaria.	Total.
Grain	23	5	10	38
Other crops	8	5	6	19
Meat	8	4	4	16
Sundries	6	2	2	10
Total	45	16	22	83

The total product is equal to 38 shillings per productive acre, and £21 for each hand employed. Agricultural wealth is approximately as follows:—

	Millions £ Sterling.			
	Roumania.	Servia.	Bulgaria.	Total.
Land	200	90	130	420
Cattle	22	10	10	42
Sundries	22	10	14	46
Total	244	110	154	508

The number of farms in the three States is, as we have seen, 1,300,000, so that the average capital is £384, as compared with £880 in France, and the product £65 per farm. Hence it may be inferred that the condition of the farmers is fairly prosperous.

FORESTS AND FISHERIES

The Danubian States are thickly wooded. According to Obedenaire, whose work turns chiefly on agriculture, the forests of Roumania cover 5,050,000 acres and yield an annual product, between firewood and timber, of £5,900,000, but this is apparently an exaggeration: a more recent writer makes it only £3,800,000, and even this is very high, being equivalent to 15 shillings per acre. It is not credible that the yield can exceed 10 shillings an acre (the average in the adjacent Austrian Empire being only 8 shillings), and therefore it may be concluded that the forest products of the three States

amount to 5 millions sterling, Roumania standing for one-half. The export of lumber is small, only 30,000 tons from Roumania and 10,000 from Servia. There are no fisheries.

MANUFACTURES

Textile mills consume yearly in the Danubian States about 26,000 tons of fibre, the collective output being about £4,800,000. Hardware is nearly all imported, the consumption of iron being under 50,000 tons. The most important industry is leather, of which 16,000 tons are consumed, one-half in Roumania. In these States, as Zehden observes, domestic articles of the coarsest description are the chief manufactures. The approximate value of such industries is as follows:—

	Roumania, £.	Servia, £.	Bulgaria, £.	Total, £.
Textiles . . .	1,800,000	800,000	1,600,000	4,200,000
Hardware . . .	200,000	100,000	100,000	400,000
Leather . . .	4,500,000	2,500,000	3,000,000	10,000,000
Food . . .	9,800,000	4,500,000	6,000,000	20,300,000
Clothing . . .	2,300,000	900,000	1,300,000	4,500,000
Houses and furniture . . .	2,700,000	1,100,000	1,500,000	5,300,000
Sundries . . .	5,300,000	2,500,000	3,400,000	11,200,000
Total . . .	26,600,000	12,400,000	16,900,000	55,900,000

These countries possess few minerals. Roumania has petroleum and salt, exporting 100,000 barrels of the former yearly. Coal is found in Servia, but nothing has been done in the way of mining: an English company has established works at Maidanpek to develop an iron and copper mine there.

COMMERCE

The foreign trade of the three States in 1894 showed thus:—

	Imports, £.	Exports, £.	Total, £.
Roumania . . .	16,900,000	11,800,000	28,700,000
Servia . . .	1,400,000	1,800,000	3,200,000
Bulgaria . . .	4,000,000	2,900,000	6,900,000
Total . . .	22,300,000	16,500,000	38,800,000

The averages for five years down to 1892 show the currents of trade thus:—

	Millions £ Sterling.			
	Imports from.	Exports to.	Total.	Ratio.
Great Britain . . .	5	7	12	33·3
Germany . . .	5	1	6	16·7
Austria . . .	3	1	4	11·1
Other countries . . .	7	7	14	88·9
Total . . .	— 20	— 16	— 36	— 100·0

Internal trade.—This amounts approximately to 138 millions sterling, viz.:—

	Millions £ Sterling.			
	Agriculture.	Manufactures, &c.	Imports.	Total.
Roumania . . .	45	29	17	91
Servia . . .	16	14	1	31
Bulgaria . . .	22	18	4	44
Total . . .	— 83	— 61	— 22	— 166

Internal trade is only £15 per inhabitant as compared with £18 in Austria.

Railways.—In 1869 the first line was made by a joint-stock company, to a length of 150 miles, and afterwards sold to the Government of Roumania. The railway system of the three States has now a total length of 2460 miles, which represent a cost of 36 millions sterling. No traffic returns are published. The following table shows the mileage of railways, highroads, and navigable waterways:—

	Railways.	Highroads.	Water.	Total.
Roumania . . .	1,600	3,400	500	5,500
Servia . . .	340	3,500	400	4,240
Bulgaria . . .	520	2,400	500	3,420
Total . . .	— 2,460	— 9,300	— 1,400	— 13,160

These States are still deficient in ways of communication, the length of route to 100 square miles of territory being in Roumania 11, in Servia 22, and in Bulgaria 9, miles. The Danube is, of course, the main artery of foreign trade, the port-entries of Roumanian ports reaching 8,400,000 tons.

EARNINGS AND WEALTH

The earnings of the three States are approximately as follows :—

	Millions £ Sterling.			
	Roumania.	Servia.	Bulgaria.	Total.
Agricultural . . .	27	10	13	50
Manufacturing, &c. . .	16	7	10	33
Trade . . .	9	3	4	16
Transport . . .	9	3	4	16
Rent and servants . . .	6	2	3	11
Professions, &c. . .	11	4	6	21
 Total . . .	 78	 29	 40	 147

The average of earnings to population is £14 in Roumania, £13 in Servia, and £12 in Bulgaria, as compared with £17 in Austria and £10 in Russia.

Wealth.—The principal components in 1894 were approximately as follows :—

	Millions £ Sterling.			
	Roumania.	Servia.	Bulgaria.	Total.
Land . . .	200	90	130	420
Cattle, &c. . .	44	20	24	88
Houses . . .	60	24	33	117
Furniture . . .	30	12	16	58
Factories . . .	9	4	6	19
Railways . . .	26	4	6	36
Merchandise . . .	46	15	22	83
Sundries . . .	104	42	59	205
 Total . . .	 519	 211	 296	 1,026

The above gives an average of £90 in Roumania, £92 in Servia, and £90 in Bulgaria, per inhabitant. These ratios are low, but it must be remembered that thirty years ago these States had hardly emerged from barbarism ; the peasantry, until 1864, were serfs on the estates of the Boyars.

Land.—The assessed rental of lands in Roumania is £6,700,000, which is equivalent to a capital value of 201 millions sterling, say £12 for cultivated, and £3 uncultivated,

per acre. If we suppose the same prices per acre in Servia and Bulgaria, the account will stand thus:—

	Millions £ Sterling.			
	Roumania.	Servia.	Bulgaria.	Total.
Cultivated . . .	140	73	78	291
Forest, &c. . .	60	17	52	129
Total . . .	200	90	130	420

Houses.—The assessed rental of Roumania in 1893 for house-property was £3,300,000, which would make the probable letting-value £3,630,000 per annum, representing a capital value of 60 millions. At the same ratio per inhabitant the houses of Servia would be worth 24, of Bulgaria 33, millions, there being no means to ascertain their value.

FINANCES

The revenues and expenditure of the three States in 1895 were as follows:—

	Revenue, £ Sterling.		
	Roumania.	Servia.	Bulgaria.
Customs . . .	2,500,000	400,000	900,000
Taxes . . .	1,500,000	1,100,000	1,700,000
Sundries . . .	4,400,000	1,000,000	1,000,000
Total . . .	8,400,000	2,500,000	3,600,000

	Expenditure, £ Sterling.		
	Roumania.	Servia.	Bulgaria.
Debt . . .	2,900,000	900,000	800,000
Army . . .	1,600,000	500,000	900,000
Government . . .	3,900,000	1,100,000	1,900,000
Total . . .	8,400,000	2,500,000	3,600,000

Between national and local charges the total amounts paid in taxes in the above States are £9,100,000 in Roumania, £2,300,000 in Servia, and £3,700,000 in Bulgaria, which shows the incidence of taxation as compared with earnings

in the several States to be—in the first $11\frac{1}{2}$, in the second 8, in the third $9\frac{1}{4}$, per cent.

Debt.—Much of the existing debts is represented by State railways, the value of which being deducted we find the real debt, as shown in the following table, compared with national wealth :—

	Nom. Debt.	Millions £ Sterling.		Debt Ratio. Per Cent.
		Real.	Wealth.	
Roumania	47	21	520	4
Servia	14	8	211	4
Bulgaria	6	4	296	$1\frac{1}{2}$
Total	67	33	1,027	$3\frac{1}{2}$

It appears, therefore, that one-half of the aggregate debts of the three States has arisen from the construction of State railways, and that the real amount of indebtedness is comparatively small. These States paid annual tribute to the Sultan down to 1878, when it was abolished, except as regarded Bulgaria, but as a matter of fact the Bulgarians have paid no tribute over since.

XVII

G R E E C E

THIS kingdom, which dates from 1830, has an area of 25,000 square miles, with a population of 2,200,000 souls, say 88 per square mile, being about the same ratio as in Spain. No less than 98 per cent. are Greeks. Greece has the peculiarity of a surplus of males, namely, 1076 to 1000 females, whereas the European average of sexes is the reverse. There is not much emigration, except to the Levant. Rural population forms 85 per cent. of the total, there being only twelve towns, with an aggregate of 310,000 souls, and of this number Athens counts for one-third. The kingdom of Greece includes only one-fourth of the Greek people, of whom 6 millions are scattered over the Levant and the Ottoman Empire. It is probably owing to the demoralising effects of the Turkish yoke under which the country groaned for so many centuries that little progress has been made in the sixty-five years that have elapsed since its emancipation. The census of 1889 gives the occupations of males, and if we add half the number of females in each class, we find as follows:—

	Agriculture.	Manufactures.	Commerce.	Various.	Total.
Males . . .	440,000	60,000	120,000	100,000	720,000
Females . . .	220,000	30,000	60,000	50,000	360,000
Total . . .	660,000	90,000	180,000	150,000	1,080,000

The working-power of the people in millions of foot-tons daily is: hand, 200; horse, 300; steam, 700; in all, 1200 millions, or 550 foot-tons per inhabitant. Steam-power amounts to 175,000 horse, of which steamboats stand for three-fourths: fixed steam-power is insignificant, comprising a few engines at the Laurium mines and some factories.

AGRICULTURE

Until recently the want of roads and the abundance of brigands checked all internal progress. Only thirty years ago it was cheaper to import grain from the Black Sea to Athens than to convey it from Marathon, 25 miles by land. The acquisition of Thessaly, 5000 square miles, in 1881, added to the agricultural capacity of Greece, and this must be borne in mind when comparing Bickford's figures for 1889 with those of Bikelas for 1860, as follows:—

Year.	Acres.			
	Grain.	Sundries.	Uncultivated.	Total.
1860 . . .	560,000	250,000	10,590,000	11,400,000
1889 . . .	1,210,000	880,000	13,810,000	15,900,000

The area of land that might be made productive is 8 million acres, or nearly four times that which is actually under cultivation. According to an official report for 1893 the cultivated area has risen to 2,340,000 acres: as this is little more than an acre per inhabitant the production of food is insufficient to feed the people. The usual grain-crop is 400,000 tons, one-half wheat, the rest made up of maize, barley, and rye; the currant-crop averages a ton per acre, say 160,000 tons. Official returns put down the vintage at 66 million gallons, but the *Moniteur Vinicole* does not believe it exceeds 36 millions. If we reduce all food to a grain denominator we find:—

Grain, tons	Quantity.	Equiv. in Grain.
Potatoes, ,,	400,000	400,000
Meat, ,,	240,000	80,000
Wine, gallons	60,000	480,000
	36,000,000	360,000
Total . . . . .	. . . . .	1,320,000

The inhabitants have to import 100,000 tons of grain and 5000 tons of meat yearly, the latter in the form of live cattle. The chief progress observable in late years is in the cultivation of currants, the crop of which rose from 40,000 tons in 1861

to 160,000 in 1893 : in the latter year the export reached 120,000 tons. Vineyards cover 340,000 acres, but the wine is nearly all used for home consumption, the export not exceeding 3 million gallons. The value of all products and the amount of capital in agriculture are approximately as follows :—

Grain . . .	£2,400,000	Land . . .	£94,000,000
Other crops . . .	6,600,000	Cattle . . .	5,000,000
Meat, &c. . .	5,000,000	Sundries . . .	10,000,000
Products . . .		Capital . . .	£109,000,000

This shows the product to be about 13 per cent. on capital, the same as in Spain. One-third of the kingdom consists of small farms, averaging 33 acres, held by 147,000 peasant proprietors ; there are also 1600 large estates, belonging to nobles, say 4,000,000 acres, and the rest is Crown land, for the most part barren mountains. The total productive area, including 5,900,000 acres used for pasture, is 8,200,000 acres, and the annual value of farm products shows an average of 35 shillings per acre, as compared with 79 shillings in Austria.

FORESTS AND FISHERIES

Forests cover 2 million acres, the product of which may be estimated at £800,000, but the supply of timber is insufficient, the import averaging a value of £300,000 per annum. The fisheries are so unimportant that Greece imports £130,000 worth of fish yearly.

MANUFACTURES

Greece depends mostly on imported goods, from England and elsewhere. The approximate value of local manufactures is as follows :—

Textiles . . .	£ 900,000	Clothing . . .	£ 900,000
Shipbuilding . . .	400,000	Houses and furn.	1,300,000
Leather . . .	1,500,000	Sundries . . .	2,100,000
Food . . .	3,300,000	Total . . .	10,400,000

The Laurium mines produce 260,000 tons of iron, lead, and zinc ores.

COMMERCE

Foreign trade has trebled in the last thirty years, the averages for five years ending December 1892 amounting to £8,900,000, against £2,700,000 in 1861. These averages show as follows:—

	Millions & Sterling.			
	Imports from	Exports to	Total	Ratio.
Great Britain . . .	1·3	1·5	2·8	31·4
France . . .	0·4	0·8	1·2	13·5
Turkey . . .	0·8	0·3	1·1	12·4
Russia . . .	0·9	0·1	1·0	11·3
Various . . .	1·6	1·2	2·8	31·4
Total . . .	5·0	3·9	8·9	100·0

Shipping.—Much of the commerce of the Levant is in Greek hands, and their flag is seen in all Eastern ports, the carrying-power of Greek shipping having trebled in the last twenty years:—

Year.	Tons Register.			
	Sail.	Steam.	Total.	Carrying-power.
1872 .	234,000	6,000	240,000	258,000
1894 .	340,000	135,000	475,000	880,000

Internal Trade.—This amounts to no more than 29 millions sterling, including 14 for agriculture, 10 for manufactures, 1 million for forestry and fisheries, and 4 for imports: the total gives an average of about £13 per inhabitant, the same as in Portugal.

Railways.—The first line opened was from Piraeus to Athens, 7 miles, in 1855: at present there are 570 miles, including a Government line of 90 miles. Bickford says that 2300 miles of high-roads have been made since 1868, at a cost of £1,600,000.

Banking.—Dishonest money is the curse of the country, and the result of extravagant finances. In order to meet repeated deficits the Government has given forced currency to

"shin-plasters" since 1877 (except a brief interval of eight months in 1885). The issue exceeds 142 million drachmas, including 88 millions by the joint-stock banks to represent advances made by them to the Government. Gold is at 50 per cent. premium.

EARNINGS AND WEALTH

The earnings and wealth of the people of Greece are shown approximately thus :—

<i>Earnings.</i>	<i>Wealth.</i>
Agricultural . . . £8,400,000	Land . . . £94,000,000
Manufacturing . . . 5,200,000	Cattle, &c. . . 15,000,000
Forestry, &c. . . 900,000	Railways . . . 6,000,000
Trade . . . 2,900,000	Shipping . . . 2,500,000
Transport . . . 3,000,000	Houses . . . 28,000,000
House-rent . . . 1,700,000	Furniture . . . 14,000,000
Domestics . . . 1,100,000	Factories . . . 3,400,000
Public service . . . 1,900,000	Merchandise . . . 14,500,000
Professions . . . 2,500,000	Sundries . . . 44,400,000
Total . . . £27,600,000	Total . . . £221,800,000

The official report for 1888 makes the national earnings £26,800,000, and the amount of wealth £213,000,000. Land is officially valued at £94,000,000, house-property £28,000,000: which brings up the total of real estate to 122 millions sterling, or 56 per cent. of the wealth of the kingdom, against 49 per cent. in France. The average of earnings is only £13, of wealth £100, per inhabitant, as compared with £13 and £83 respectively in Portugal, these being two of the poorest countries in Europe.

FINANCES

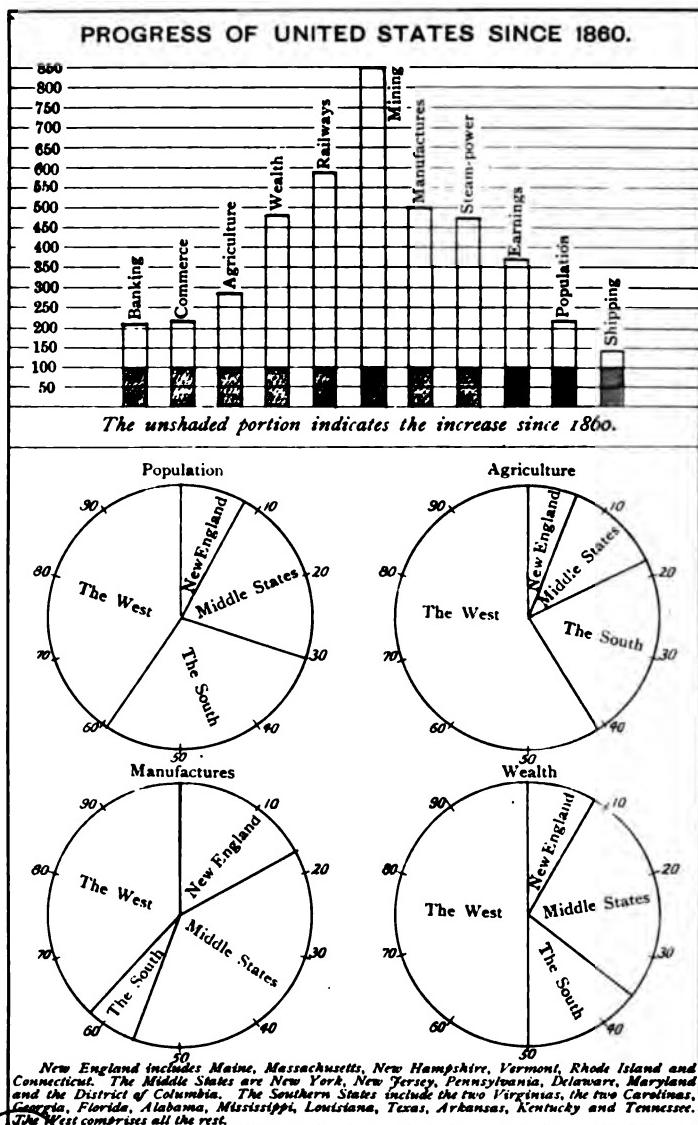
For sixty years the financial condition of Greece has been deplorable, every successive Government plunging the kingdom deeper into debt. Since 1879 things have been no better

than before : the revenue has doubled, and yet the debt has been increased by 14 millions sterling, or nearly a million a year. The budget for 1895 showed a revenue of £3,700,000, of which 90 per cent. was raised by taxation : there are also local taxes to the amount of £700,000, so that the total burthen on the public is just 4 millions sterling, or 14 per cent. of the earnings of the people, as compared with 8 per cent. in the United Kingdom.

Debt.—The national debt rose from 10 millions in 1840 to 33 millions sterling in 1895. There is also a local debt of £800,000. Deducting the value of the State railway (90 miles) the total debt is 33 millions sterling, or 15 per cent. of national wealth.

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XVIII

THE UNITED STATES

POPULATION multiplied five-fold between 1830 and 1890, rising from 12,870,000 to 62,620,000. The increase in that period was 49,750,000, made up as follows :—

	1831-50.	1851-70.	1871-90.	60 years.
Surplus births .	8,435,000	12,045,000	20,880,000	40,860,000
Immigrants .	1,885,000	3,825,000	3,680,000	8,890,000
Total .	10,320,000	15,370,000	24,060,000	49,750,000

The above table does not show the number of immigrants, but the increase of foreign population in each period : thus in the census of 1890 there were 8,890,000 more persons of foreign birth than in that of 1830. It appears, therefore, that less than one-fifth of the increase of population since 1830 is due to immigration, at least directly ; but of course the natural increase, or surplus of births over deaths, has been largely affected by the influx of millions of Europeans. The actual number of immigrants who arrived in the above interval of sixty years was 15,640,000, of whom nearly half died or left the country. The following table shows the arrivals and the net gain to population :—

	1831-50.	1851-70.	1871-90.	60 years.
Arrivals .	2,310,000	5,040,000	8,290,000	15,640,000
Died or left .	425,000	1,715,000	4,610,000	6,750,000
Balance .	1,885,000	3,325,000	3,680,000	8,890,000

If we study the increase of American-born population, we find as follows :—

Period.	Increase.	Mean Pop.	Annual Increase.
1831-50 .	8,435,000	17,500,000	24·1 per 1000
1851-70 .	12,045,000	31,100,000	19·3 ..
1871-90 .	20,380,000	50,400,000	20·2 ..

The first census which distinguished American-born children of foreigners was that of 1860, since which time it has been possible to classify the population of the United States under four heads. If we compare the figures for 1890 with those for 1860 we find that the negro element is declining in ratio, forming at present less than 12 per cent. of the total, as compared with 14½ per cent. in 1860. The foreign element has increased much more rapidly than that of white Americans, viz :—

	1860.	1890.	Increase Ratio, per Cent.
White Americans .	17,727,000	34,476,000	95
Negroes .	4,486,000	7,470,000	66
Foreigners .	4,139,000	9,250,000	123
Their children .	5,091,000	11,426,000	124
Total . .	31,443,000	62,622,000	99

The negro population has lost ground everywhere except in the New England States, to which there has been an influx since the abolition of slavery, as we see by comparing last census with that of 1850 :—

Year.	Negroes in 1000 Inhabitants.				
	New England.	Middle States.	South.	West.	Union.
1850	9	49	380	24	157
1890	10	39	349	18	119

At the same time the European element has increased in ratio in all parts of the Union, the number of foreign-born persons showing thus :—

Year.	Foreigners in 1000 Inhabitants.				
	New England.	Middle States.	South.	West.	Union.
1850	110	160	21	125	97
1890	243	203	22	190	148

Although the foreign element is relatively strongest in New England, the greatest strength numerically is in the Western States, which have absorbed nearly 5 million Europeans, or more than half the total number in the Union, as shown in the following table:—

States.	Germans.	Irish.	British.	Others.	Total.
N. England .	68,000	418,000	176,000	490,000	1,142,000
Middle .	896,000	860,000	456,000	661,000	2,873,000
South .	136,000	61,000	48,000	159,000	404,000
West .	1,690,000	538,000	571,000	2,082,000	4,881,000
Total .	2,785,000	1,872,000	1,251,000	8,842,000	9,250,000

Among foreign nationalities Germans hold the first rank in all parts of the Union, except New England, where the Irish are first. The British are second in the Western States, the only section where they outnumber the Irish. According to the census of 1890, of every thousand inhabitants in the Union 852 were American-born, 45 Germans, 30 Irish, 20 British, and 53 of other nationalities. The foreign-born population included, besides Europeans, 981,000 Canadians and 107,000 Chinese, the latter forming 6 per cent. of the population of California. As regards the distribution of sexes the census of 1840 showed that males were $3\frac{1}{2}$ per cent. more than females, and in 1890 the excess rose to 5 per cent., the increase of the male ratio being, doubtless, the result of immigration. Meantime New England shows a female surplus of 3 per cent., while the Western States have an excess of 10 per cent. males.

The latest report on vital statistics is that by the Commissioner, Dr. Billings, in 1886, on the previous census, 1880, from which it appears that the death-rate was 15·1 per thousand. Dr. Billings states that 1000 women between the ages of 15 and 49 gave birth to 127 children yearly among whites, and 164 among the negro race; that is to say, 3 coloured women have as many children as 4 white. So great, however, is infant mortality among negroes that the growth of coloured population, as we have already seen, is much slower than that

of white. He computes the birth-rate for the whole Union at 34 per thousand, but it would seem to be 35, since the growth of American-born population between 1870 and 1890, as already shown, averaged a fraction over 20, and the death-rate in 1880 was 15·1 per thousand. These figures compare with those of two other new countries as follows, per thousand of population yearly :—

	U. States.	Australia.	Canada.
Births	35·3	35·0	28·3
Deaths	15·1	14·0	14·1
Natural increase	20·2	21·0	14·2

The most striking feature of American life in the last thirty years is the rapid growth of urban population, which has increased almost four times as fast as rural; by the term urban is understood in the United States all cities and towns over 8000 souls, and the figures compare as follows :—

	1860.	1890.	Increase per Cent.
Urban	5,072,000	18,265,000	260
Rural	28,371,000	44,357,000	68

The surplus of births over deaths in the rural population during the above term of thirty years at the foregoing rate of 20·2 per thousand would have been 21,420,000, so that if there had been no immigration the rural population in 1890 should have amounted to 47,791,000, or 3½ millions more than it was. It appears, therefore, that even with the aid of immigration the rural districts have relatively lost ground, such was the attraction which manufacturing industry and high wages in the cities held out to the working classes. Take, for example, the four largest cities of the Union, which we find to have almost quintupled since 1850; in the following table New York includes the suburbs of Brooklyn, Hoboken, and Jersey City, which are as integral parts of the former as Southwark and Kensington are of London :—

Year.	New York.	Chicago.	Philadelphia.	St. Louis.	Four Cities.
1850	652,000	30,000	340,000	78,000	1,100,000
1890	2,528,000	1,091,000	1,047,000	452,000	5,118,000

The population of the Union in 1895 was very close on 70 millions, that is almost as much as the aggregate of France and Great Britain, having risen 40 per cent. since 1880; the distribution in 1895 is approximately in comparison with 1880 as follows:—

Year.	New England.	Middle.	South.	West.	Total.
1880 .	4,011,000	11,757,000	15,256,000	19,132,000	50,156,000
1895 .	5,100,000	15,400,000	20,100,000	29,100,000	69,700,000

While the density of population for the whole Union is only 23 per square mile, the older parts are as thickly populated as many countries of Europe, the ratio for the Middle States being 135 per square mile, and for the Continent of Europe only 80.

No census showing occupations has been published since that of 1880, since which year the population has risen 40 per cent., and therefore the number of working hands in 1895 may be estimated to compare with the number in 1880 approximately as follows:—

Year.	Agriculture.	Manufactures.	Various.	Total.
1880 .	7,670,000	3,840,000	11,060,000	22,570,000
1895 .	10,740,000	5,880,000	15,490,000	31,610,000

The energy or working-power of the people has multiplied nearly eight-fold since 1840, viz.:—

Year.	Millions of Foot-tons Daily.			Foot-tons per Inhabitant.
	Hand.	Horse.	Steam.	
1840 .	1,406	12,900	3,040	17,346
1860 .	2,805	22,200	14,000	39,005
1895 .	6,400	54,600	67,700	128,700

The collective power has more than trebled since 1860, steam-power having multiplied five-fold in the last thirty-five years, the strength being shown approximately thus:—

Year.	Horse-power of Steam.			Horse-power per 1,000 Pop.
	Fixed.	Locomotives.	Steamboats.	
1860 .	800,000	1,800,000	900,000	3,500,000
1895 .	3,940,000	10,800,000	2,200,000	16,940,000

More than three-fourths of steam-power is employed for traction purposes, on railways and in steamboats, which is not surprising when we consider that the area of activity is as vast as Europe, and that the merchandise transported by rail appears, from official returns, to be double the goods traffic by rail of all other countries in the world collectively. It has been already shown that the average of energy in the United States is 1940 foot-tons daily per inhabitant, which is more than double the European average, so that it may be said 70 millions of Americans represent as much working-power as 150 millions of Europeans.

AGRICULTURE

The growth of American agriculture in half a century has been unparalleled in any age or nation, the production of grain showing as follows :—

Year.	Wheat.	Maize.	Oats, &c.	Total.
1840 .	2,100,000	9,500,000	3,800,000	15,400,000
1895 .	11,700,000	53,800,000	23,900,000	89,400,000

The grain-crop of 1895 was equal to 8 tons per hand employed in farming, the average in Europe being 2 tons : the superiority of the American agriculturist is due to improved machinery. Nevertheless all parts of the Union have a deficit of grain, except the Western States ; but for the surplus crops from those prairies it would be necessary to import 8 million tons yearly for the food of men and animals. The ordinary crop of the Western States is 56 million tons, of which a little less than 50 millions is consumed in the United States, the quantity of grain exported from the country in the last three years averaging 6,500,000 tons. The area under all crops quadrupled between 1850 and 1895, as the following table shows, in acres :—

Year.	Grain.	Cotton.	Meadow, &c.	Total.
1850 .	34,200,000	6,100,000	11,050,000	51,350,000
1895 .	149,950,000	23,740,000	51,800,000	225,490,000

The area under grain is larger than the German Empire, that under hay is the size of Great Britain, and the cotton-fields cover more than the kingdoms of Holland and Belgium put together. Besides the area under crops there are 133 million acres under pasture, bringing up the total improved area to 358 million acres, or nearly one-fifth of the extent of the United States (excluding Alaska). The following table shows the whole Union under three heads, improved, unimproved, and unoccupied : the actual area of farms includes the first two classes, together 623 million acres :—

States.	Millions of Acres.				Total.
	Improved.	Unimproved.	Unoccupied.		
New England . . .	11	9	24		44
Middle . . .	86	13	24		73
South . . .	104	147	271		522
West . . .	207	96	980		1,283
Union . . .	358	265	1,299		1,922

The Homestead Law of 1862 has had a powerful influence in promoting agriculture : by this law in thirty-two years no less than 164 million acres (an area larger than France, Belgium, Holland, and Denmark collectively) have been given gratis to immigrants in farm lots of 160 acres, and in the same interval settlers have bought 67 million acres from railway companies. The result is, that the area of improved lands showed an increase of 194 million acres between 1860 and 1890, or 6½ millions yearly.

Pastoral interests are inferior in importance to those of tillage, the value of products in 1893 showing as 40 to 60 in this respect. Nevertheless there has been in the last forty-four years a great advance in the number and value of live-stock, and this is the more remarkable, seeing that population has trebled in the interval, and that there has been in late years a great demand of meat and cattle for exportation to Europe. The numbers of live-stock show thus :—

Year.	Cattle.	Sheep.	Pigs.	Horses.
1850 . . .	17,800,000	21,700,000	30,400,000	4,900,000
1894 . . .	53,100,000	45,100,000	45,200,000	18,400,000

The value of live-stock in 1894 was 451 millions, against 113 millions sterling in 1850. Iowa is relatively the richest State in this respect, possessing live-stock to a value of £22 per inhabitant, which is surpassed only in Australia, where the average is £30 to each inhabitant. The following table shows the number of cattle, sheep, and pigs to 100 inhabitants in the great sections of the Union, and also to each thousand acres of the farming area of 1890:—

States.	Per 100 Inhabitants.			Per 1000 Acres.		
	Cattle.	Sheep.	Pigs.	Cattle.	Sheep.	Pigs.
New England . . .	30	18	7	72	42	17
Middle . . .	32	22	16	92	63	46
South . . .	87	48	94	64	36	69
West . . .	122	127	100	102	106	83
Union . . .	80	67	67	84	72	72

The farms of the Western States are so heavily stocked that if those in other parts of the Union had the same number of animals per thousand acres there would be in the United States 11 millions more cattle, 22 millions more sheep, and 7 millions more pigs. The occupied lands, as already shown, comprise only 32½ per cent. of the Union: if we suppose the unoccupied to be capable of carrying half the stock of the former per acre, say 42 cattle, 36 sheep, 36 pigs, and 15 horses per thousand acres, the pastoral resources of the United States might be more than doubled. The following table shows the live-stock on existing farms, and what could be carried by unoccupied lands on the above basis:—

	On Farms.	Unoccupied.	Total.
Cattle . . .	53,100,000	55,500,000	108,600,000
Sheep . . .	45,100,000	47,200,000	92,300,000
Pigs . . .	45,200,000	47,300,000	92,500,000
Horses . . .	18,400,000	19,200,000	37,600,000

At present the annual production of meat is about 4,830,000 tons, of which 460,000 are exported, leaving for consumption 4,370,000, equal to 140 lbs. per inhabitant. Neither New England nor the Middle States raise enough meat for consumption, their deficit amounting to 1,020,000 tons, but the

Southern and Western have a surplus of 1,480,000 tons. The exportation to Great Britain includes 220,000 tons of beef and 180,000 of pork, besides 130,000 tons of meat sent to other countries. If we reduce all food to a grain denominator, the production in 1895 will stand thus:—

	Quantity, Tons.	Equivalent in Grain, Tons.
Grain	89,400,000	89,400,000
Potatoes	7,480,000	2,490,000
Meat	4,830,000	38,640,000
Wine, gallons	30,000,000	300,000
Total		130,830,000

But for the great development of tillage and pastoral industry in the United States some European countries, especially England, would come short of grain and meat. At present the United States raise one-third of the food produced in the world, viz.:—

	U. States.	Europe.	Other Countries.	Tons.
Grain .	89,400,000	141,500,000	23,300,000	254,200,000
Meat .	4,830,000	9,380,000	1,290,000	15,500,000

The meat product of the United States consists approximately of 2,410,000 tons of beef, 2,050,000 of pork, and 370,000 of mutton, the whole representing a value of 163 millions sterling. Notwithstanding the great fall, in recent years, of prices for all farming products, the value of these products in the United States has doubled since 1860. The following table is an approximate statement of these values:—

	Millions & Sterling.			Millions & Sterling.			
	1840.	1860.	1893.	1840.	1860.	1893.	
Grain	62	172	217	Meat	29	68	163
Cotton	15	40	56	Dairy	14	34	87
Hay	20	33	119	Poultry	7	17	42
Sundries	28	43	94	Hides, &c. . . .	5	18	35
Tillage	125	288	486	Animal prod. . . .	55	132	327

This makes for 1893 a total value of 813 millions sterling, the official valuation in 1886 having amounted to 777 millions sterling, and this was the last made. The Western States

stand for nearly 55 per cent. of the total, the amounts that correspond to the various sections of the Union, and the number of hands employed, being approximately as follows :—

States.	Millions £ Sterling.			No. of Hands.	£ per Hand.
	Tillage.	Pastoral.	Total.		
New England . . .	20	13	33	545,000	60
Middle . . .	65	47	112	1,706,000	66
South . . .	152	72	224	3,650,000	61
West . . .	249	195	444	4,840,000	92
Union . . .	486	327	813	10,740,000	75

The value compared with the productive area gives an average of 46 shillings per acre, against 96 in the United Kingdom. About one-sixth of the agricultural products are exported, as shown by the customs returns, from which fact it may be asserted that 1,800,000 persons are exclusively occupied in producing food for exportation to Europe. The value of products consumed at home and of those exported were at various dates as follows :—

	Millions £ Sterling.				
	1840.	1860.	1880.	1886.	1893.
Exported . . .	19	53	143	101	128
Home use . . .	161	367	556	674	685
Total . . .	180	420	699	775	813

When we compare the total value of farm products with the area under farms, we find that the gross product per acre is not much more than forty years ago, while the price of land is higher, but there is some compensation in the fact that the reduced cost of transport, since the construction of railways, is equivalent to 10 per cent. on the yearly value of products. The following table shows the value of land and of products at various dates, the same per acre, and the ratio of product to land-value :—

Year.	Millions £.		£ per Acre.		Ratio of Product.
	Land.	Product.	Land.	Product.	
1850 . . .	681	246	6·0	2·2	36·7
1870 . . .	1,543	495	8·2	2·6	31·7
1893 . . .	2,765	813	7·7	2·3	29·4

There has been such an improvement of agricultural machinery in late years that the area of cultivation per farming hand rose from 32 acres in 1870 to 37 in 1880. Not quite three-fourths of the farms are in the hands of owners, the census of 1890 showing that owners are 72, tenants 10, and metayer or partnership farms 18, per cent. of the total, this last class not paying rent in money, but giving half or other portion of the crops to the owner of the land.

FORESTS AND FISHERIES

The forest area is about the same extent as that of Russia, showing (without Alaska) a total of 466 million acres, equal to 7 acres per inhabitant, the average in Europe being hardly 2 acres. The forests of the United States show thus :—

States.	Acres.	Population.	Acres per 100 Population.
New England . . .	19,000,000	5,100,000	372
Middle . . .	18,000,000	15,400,000	117
Southern . . .	233,000,000	20,100,000	1,160
Western . . .	196,000,000	29,100,000	672
Total . . .	466,000,000	69,700,000	670

It was computed in 1888 that 30,000 acres of timber were felled daily : the annual output of the sawmills of Maine was 12 million tons, that of the Michigan mills 19 millions. The domestic consumption for firewood and fences would seem to exceed 400 million tons, the total felling in 1888 being estimated at 600 million tons, value £120,000,000 sterling. The lumber industry has just kept pace with the growth of population ; it was equal to nearly \$10, or £2 sterling, per inhabitant in 1870, and the same in 1888, viz. :—

	Millions of Dollars.	
	1870.	1888.
Firewood	72	104
Fences	150	210
Planks, sleepers, &c.	134	241
Export	14	21
Total	370	576

The lumber industry of the United States exceeds in value by 4 millions sterling that of all European countries in the aggregate.

Fisheries do not show much progress in late years, the returns for 1892 comparing with those of 1880 as follows:—

Year.	Hands.	Take, £ Sterling.	£ per Man.
1880	131,000	8,600,000	66
1892	192,000	9,400,000	49

There is probably no industry that gives so poor a return per hand in the United States as this.

MANUFACTURES

The first complete census of manufactures was that of 1850, and the returns for 1890 show that they increased in value nine-fold in forty years: in the same period the number of operatives multiplied only five-fold, one operative now producing nearly as much as two did in 1850. The following table shows the value of goods manufactured, the number of operatives, and the average output per hand:—

Year.	Millions £.	Operatives.	£ per Hand.
1850	212	958,000	220
1870	705	2,054,000	343
1890	1,952	4,713,000	414

Manufactures may be said to have their home in New England, where they constitute the chief occupation of the people, but it is in the Western States that the greatest relative progress has been made, and hence it comes to pass that New England stood in 1890 for only one-sixth of the manufacturing output of the Union, whereas it represented 28 per cent. in 1850. The value of goods manufactured in the various sections of the United States was as follows:—

Year.	Millions £ Sterling.					Total
	N. England.	Middle.	South.	West.		
1850	59	98	21	34	212	
1890	312	760	147	733	1,952	

In the census of 1890 operatives figured for 13 per cent. of the able-bodied population, whereas in 1860 they were only $7\frac{1}{2}$ per cent. The rapid increase of manufactures in the last thirty years fully explains the abnormal growth of urban population.

Textiles.—If we compare the output of 1890 with that of 1850 as regards value, we find that it multiplied more than five-fold, showing as follows :—

Year.	Millions £ Sterling.				Total.
	Cottona.	Woollens.	Sundries.		
1850	14	10	5		29
1890	56	44	61		161

Cotton has always occupied the foremost rank in this class of manufactures. The first cotton-mill was built at Providence, Rhode Island, in 1790, and the number of mills in 1850 was 1094, but many of the smaller ones have disappeared, only 905 existing in 1890. The growth of this industry in fifty years is shown thus :—

Year.	Spindles.	Operatives.	Cotton, Tons.	Output, £.
1840	2,200,000	72,000	60,000	9,600,000
1890	14,000,000	222,000	520,000	55,800,000

New England stands for £38,400,000, or 70 per cent. of the total output: the average product per operative in Massachusetts is £274, and in the other States £240. The cotton goods made are almost wholly consumed at home, the value exported never reaching 2 millions sterling. Each operative turns out about 14 miles of cotton cloth yearly, the output of 1890 reaching about 3,100,000 miles, or one-fourth of the world's product.

Woollen manufactures multiplied ten-fold between 1840 and 1893, as shown by the consumption of wool, as follows :—

Year.	Tons of Wool.		
	Native.	Imported.	Total.
1840	16,000	5,000	21,000
1893	135,000	75,000	210,000

Woollen operatives in 1890 showed an average product of £385 each, as compared with £251 for cotton operatives, which is explained by the superior value of raw material in the former case. The cotton operative received 6 cents, the woollen 12 cents, on every pound of raw material that passed through his hands; the wages of the former averaged £66, of the latter £80, per hand. Meantime if we compare wages with output we find the cotton operatives received a higher share, namely, 26 per cent., while the woollen operative took only 21 per cent. of the value produced by him.

Silk is comparatively a new branch of manufacture, the output having more than doubled in ten years: it rose from 8 millions in 1880 to 18 millions in 1890. In the latter year there were 51,000 operatives, the average value of goods produced by each operative having risen in ten years from £275 to £354, a sign that the industry is improving and likely to prosper. Most of the silk-mills are in and about New York.

Flax, Hemp, &c.—The weight of flax and hemp grown in the United States averages 60,000 tons yearly, besides which the mills consume 160,000 tons of flax, hemp, and jute imported, the total output in 1894 being of the approximate value of 22 millions sterling. The ordinary importation of manufactured goods of this class is 6 millions, bringing up the home consumption to 28 millions sterling, equal to 8 shillings per inhabitant, against 15 shillings in the United Kingdom, and 10 in France. This branch of manufacture shows some progress, the trade returns for 1894 showing, as compared with those of 1884, a decline of 20 per cent. in the value of imported goods, and a corresponding increase in the weight of raw fibre imported, the latter having risen from 130,000 to 160,000 tons. The census of 1890 gave the following particulars as to goods of this class manufactured in the United States:—

Goods.	Hands.	Wages, £.	Output, £.
Twine . . .	13,000	900,000	6,900,000
Bagging . . .	7,000	500,000	4,200,000
Sundries . . .	11,000	1,100,000	4,100,000
Total . . .	31,000	2,500,000	15,200,000

The average value of output to each hand employed was £500 sterling, or three times the average product of textile operatives in the United Kingdom.

Clothing stands high among the list of manufactures, the output in 1890 reaching 111 millions sterling, an increase of 80 per cent. over 1880. The principal seat of this industry is New York, viz. :—

	Operatives.	Output, £.	£ per Hand.
New York . . .	133,000	42,500,000	319
Other States . . .	226,000	68,500,000	303
Total . . .	359,000	111,000,000	308

Notwithstanding the enormous production of dry goods, it is insufficient for the wants of the people, as will be seen in the following table, imports signifying net imports :—

	Production, £.	Imports, £.	Consumption, £.
Cottons . . .	55,800,000	4,500,000	60,300,000
Woolens . . .	44,400,000	4,100,000	48,500,000
Silks . . .	18,100,000	5,100,000	23,200,000
Clothing . . .	111,000,000	4,600,000	115,600,000
Sundries . . .	42,600,000	7,300,000	49,900,000
Total . . .	271,900,000	25,600,000	297,500,000

Imported goods are a little more than 8 per cent. of the consumption, which averages 85 shillings per inhabitant, this ratio being much higher than in any country except Great Britain. It must be observed that values are inflated by the system of Protection, making the prices of dry goods very oppressive to the great bulk of the population. The value of textiles, exclusive of clothing, consumed by the American people is 182 millions sterling per annum, equal to 52 shillings per inhabitant, against 62 in the United Kingdom.

Hardware.—The production of iron multiplied exactly fifty-fold between 1830 and 1890, amounting in the latter year to 9,200,000 tons, a quantity far in excess of the production of any other country. Steel was first manufactured in 1808, but only a small lot of 900 tons: the production rose to 3,400,000 tons in 1889, being one-third of the world's output.

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All metallic industries may be reduced to two classes, the returns for 1890 showing as follows :—

	Product, £.	Operatives.	Wages, £.
Machinery .	86,000,000	248,000	30,800,000
Hardware .	143,300,000	536,000	61,400,000
Total . .	229,300,000	784,000	92,200,000

This gives an average of £292 product and £117 wages to each operative, being much higher as to product and wages than falls to operatives in Europe. Imports and exports of iron and steel manufactures balance one another, and the consumption of iron averages 300 lbs. yearly per inhabitant, being about the same as the consumption of bread. The value of goods consumed in 1890 was 229 millions sterling, as shown above, say £4 per inhabitant.

Leather.—This industry quintupled in forty years, the value of boots, shoes, and other leather manufactures rising from 19 millions in 1850 to 106 millions sterling in 1890. Notwithstanding the millions of live-stock on the prairies the country does not supply sufficient hides for home use: the quantity of leather made yearly is about 240,000 tons, of which one-fourth is made from 100,000 tons of imported hides.

Lumber.—The output of sawmills has multiplied exactly ten-fold since 1850, the amount in 1890 reaching 123 millions sterling, and the mills employing 373,000 hands: this gives an average product of £330 per hand. These hands appear to earn a lower wage than most others, the average for saw-mills in 1890 being only £76 per man.

Flour.—The value of this item has quadrupled in forty years, rising from 28 millions in 1850 to 107 millions sterling in 1890; but the quantity of flour milled has increased in a greater measure, prices having fallen in the interval.

Meat-packing.—This first figured among manufactures in 1870, since which year it has multiplied in value twelve-fold, amounting in 1890 to 118 millions £, representing about 3 million tons of meat.

Summary.—The various branches of manufacture, according to the census of 1890, were distributed among the various sections of the Union as follows:—

States.	Millions £ Sterling.					Total.
	Textiles.	Hardware.	Food.	Sundries.		
New England . . .	96	29	20	167	312	
Middle . . .	129	111	96	424	760	
South . . .	12	14	23	98	147	
West . . .	35	75	190	433	733	
Union . . .	272	229	329	1,122	1,952	

In the foregoing table textiles include clothing, and hardware all metallic industries except jewellery. The relative importance of manufactures is greatest in New England, where the output in 1890 averaged £67 per inhabitant, as compared with £54 in the Middle States, £8 in the Southern, and £29 in the Western. The amount of product and of wages, and the averages per operative, were as follows:—

States.	Millions £.		£ per Hand.			
	Product.	Wages.	Operatives.	Product.	Wages.	
New England . . .	312	86	885,000	353	98	
Middle . . .	760	195	1,810,000	420	108	
South . . .	147	35	459,000	320	76	
West . . .	733	160	1,559,000	470	102	
Union . . .	1,952	476	4,713,000	414	101	

The product per hand is highest in the Western, but the highest average of wages is in the Middle States, which is perhaps because the cost of living is much higher in the latter. On the whole the condition of the working classes seems much better now than it was forty years ago; the average wage per operative rose from £51 in 1850 to £101 in 1890, an increase of 98 per cent., while the output per operative rose only 88 per cent., namely from £220 to £414. Thus the operative at present received in wages 24½ per cent. of the gross value of goods produced by him, as compared with 23 per cent. in 1850. The amount of wages paid to operatives in 1890 represented one-sixth of the total earnings of the people.

MINERALS

As regards quantity the mining products almost equal those of Great Britain, while in point of value they surpass those of any country in ancient or modern times. The weight of mineral stuff raised has been approximately as follows:—

Year.	Tons of Mineral.				Total.
	Coal.	Iron Ore.	Quartz, &c.		
1830 .	1,300,000	400,000	90,000		1,790,000
1870 .	33,000,000	3,200,000	3,100,000		39,300,000
1894 .	165,000,000	10,800,000	4,200,000		180,000,000

The above is exclusive of building and lime stone, of which 23 million tons were used in 1892, and if this were added to the figures for 1893 the total would exceed 200 million tons. The value of mineral products has multiplied nearly five-fold since 1850, showing as follows:—

Year.	Millions £ Sterling.					Total.
	Coal.	Gold.	Silver.	Sundries.		
1850	5	10	0	4		19
1894	39	8	6	41		94

The official returns are confusing, as they give the value not of ores, but of metals obtained from them; moreover, they put the value of silver at 64 pence instead of 28 pence (the real market price) per ounce. In this way the mining product for 1894 is made to reach 109 millions sterling or \$27,000,000 dollars, viz.:—

Non-metallic.	Millions \$.	Metallic.	Millions \$.
Coal	186	Iron	65
Stone	37	Silver	64
Petroleum	36	Gold	40
Sundries	50	Copper, &c. . . .	49
Total	309	Total	218

The value of iron ore was only \$22,000,000, and that of the silver produced \$28,000,000, so that the real value of mining products did not really exceed 94 millions sterling.

The number of miners in 1880 was 234,000, who raised 104 million tons of minerals, being an average of 440 tons each; if we take 400 tons as the present average the number of miners would be 575,000, the weight of mineral raised having been approximately 230 million tons in 1894.

Ironstone.—The production of this mineral in 1840 was only 600,000 tons, but it rose rapidly with the construction of railways, reaching 13,300,000 tons in 1889, and declining in later years. The yield is usually 40 per cent. iron.

Coal was first discovered in Pennsylvania in 1768, but sixty years elapsed before the output reached a million tons. From the year 1830 the production increased so rapidly that twenty years later Pennsylvania had constructed 7 canals and 27 railways expressly for carrying coal. American coal is for the most part bituminous, only 30 per cent. of what is raised being anthracite. The coal-fields cover an area of 195,000 square miles, that is about the size of France. Coal and iron are found mostly in the Middle and Western States, the output of 1890 showing:—

	Tons Raised.			
	Middle.	Western.	Southern.	Total
Coal . . .	84,700,000	40,200,000	16,400,000	141,300,000
Ironstone . .	8,300,000	8,300,000	2,900,000	14,500,000

Lead and Copper.—Lead mines were first opened in 1829, in Missouri and Colorado, the ore giving about 70 per cent. of metal: the production of metallic lead in 1892 reached 200,000 tons, having more than doubled since 1880. Copper-mines were worked by the French Jesuits of Lake Superior as far back as the seventeenth century, but the industry in modern times may be said to date from 1843, when the United States Government bought the Lake Superior copper-fields from the Chippeway Indians. At present 900,000 tons of ore are raised yearly, from which 150,000 tons of bar-copper are extracted, valued at 7 millions sterling. Among other minerals may be mentioned zinc, the production reaching 80,000 tons of metal, worth £1,200,000.

Petroleum was first discovered near Pittsburg in 1845, and the first Oil company was formed nine years later at New York, but no petroleum worth mention was raised till 1859. In the last thirty-six years no fewer than 60,000 wells have been sunk, of which 6000 are now working. The production has been as follows :—

	Millions of Barrels.		
	1859-60.	1881-98.	36 years.
Raised	172	440	612
Exported	80	172	252
Home use	92	268	360

The production during the last three years has averaged 50 million barrels, or 2100 millions of gallons ; and the exportation 17 million barrels, or one-third of the output. The value of crude petroleum at the pit's mouth raised in the above thirty-five years was 118 millions sterling, but the value of the refined oil, ready for market, was nearly four times as much, showing approximately as follows :—

	Millions £ Sterling.		
	1859-60.	1881-98.	36 Years.
Exported	117	123	240
Home use	98	118	216
Total	215	241	456

The value of petroleum refined in the last twenty-three years reached 368 millions sterling, which exceeds by 3 millions the total production of gold and silver in the United States during the same period.

Gold and Silver.—Gold was found in North Carolina early in the present century, and in 1850 Professor Whitney estimated the total yield until then at no more than 21 tons, worth hardly 3 millions sterling. It was in 1849 that the first Californian discovery took place at Captain Sutter's mill, and the new gold-fields quickly dazzled the world. Silver was found in Storey County, Nevada, by J. H. Comstock and James Phinney in 1858, and the Comstock mine proved so rich in both precious metals that it produced in six years

(1871-76) no less than 105 tons of gold and 1600 of silver, together worth 28 millions sterling. The total product of precious metals in forty-four years has been :—

Period.	Tons.		Value, Millions £.		
	Gold.	Silver.	Gold.	Silver.	Total
1850-69 . .	1,526	2,130	213	18	231
1870-89 . .	1,104	20,980	154	151	305
1890-93 . .	201	7,270	28	45	73
44 years . .	2,830	30,380	395	214	609

Colorado in 1892 produced 30, Montana 20, California 15, and the other States 35, per cent. of the aggregate value of gold and silver produced in the Union.

COMMERCE

The strength of the United States lies in its internal development, and hence the growth of its trade with foreign countries is relatively slow, showing as follows :—

	Millions £ Sterling.				
	1820.	1840.	1860.	1880.	1896.
Imports . .	15	20	75	140	161
Exports . .	11	24	84	171	182
Total . .	26	44	159	311	343

The foreign trade of 1896 averaged only £5 per inhabitant, against £18 in the United Kingdom. It is manifest that trade has been cramped and hindered in all directions by the protective tariffs : these have had the effect of stimulating manufactures, but at an enormous cost to the American people. Suffice it to compare the aggregate of imports and exports for the last fourteen years, which shows that there has been a great excess of exports, or, in other words, a "balance of trade" largely in favour of the United States, a proof that the trade with foreign countries is on an unsatisfactory footing, viz., imports 2104, exports 2352, surplus exports 248, millions sterling. The old fallacy of the "mer-

cantile system," which is still in force among Protectionists, supposed that the value of surplus exports came back in bullion, but the official tables of the United States show the reverse : the imports and exports of the precious metals have been as follows :—

Period.	Millions £ Sterling.		
	Imported.	Exported.	Surplus exported.
1871-80 . . .	64	127	63
1881-90 . . .	101	107	6
1891-95 . . .	58	122	64
25 years . . .	223	356	133

Notwithstanding the fact that since 1881 the exports of merchandise have exceeded imports by 18 millions sterling per annum, there has been at the same time an outflow of precious metals averaging $4\frac{1}{2}$ millions sterling yearly. The net outflow of the past twenty-five years has been 60 per cent. silver, 40 per cent. gold, the total current of bullion in that period showing as follows :—

	Millions £ Sterling.		
	Gold.	Silver.	Total
Imported	150	78	223
Exported	202	154	356
Net export	52	81	133

The trade relations of the United States with other countries are shown in the subjoined table of average imports and exports of merchandise during five years ending June 1894, which is as follows :—

	Millions £ Sterling.			
	Imports from.	Exports to.	Total.	Ratio.
Great Britain	34	94	128	38·2
Germany	18	19	37	10·4
France	14	13	27	7·6
Cuba	14	4	18	5·1
Canada	8	10	18	5·1
Various	78	48	126	35·6
Total	166	188	354	100·0

The returns for 1894 compared with those of 1884 show that commercial relations with Great Britain, Canada, and

France are declining, and those with other countries are on the increase. The four principal seaports are New York, Boston, Philadelphia, and New Orleans, and these make up three-fourths of the foreign trade, the aggregate of imports and exports showing in 1893 as follows in millions £. New York 186, Boston 34, Philadelphia 24, New Orleans 21, other ports, 92, total 357. Thus New York stands for more than half the foreign trade of the United States.

Shipping.—The Protective policy adopted after the civil war of 1861–65 has in a manner driven American shipping from the high seas. In 1830 no less than 90 per cent. of foreign trade was done on American bottom, but in 1894 the ratio had fallen to 13 per cent., the amount showing as follows at various dates:—

Flag.	Millions £ Sterling.			
	1830.	1860.	1880.	1894.
American	25	106	54	41
Others	3	53	257	281
Total	28	159	311	322

At the ordinary estimate of 5 per cent. for freight it appears that the American people pays a tribute of 14 millions sterling per annum to foreign shipping. Meantime the shipping used for coasting or internal waters has trebled in fifty years, viz.:—

Year.	Nominal Tonnage.			Carrying Power.
	Ocean.	Coasting, &c.	Total.	
1840 . . .	760,000	1,420,000	2,180,000	2,780,000
1860 . . .	2,380,000	2,970,000	5,350,000	7,960,000
1894 . . .	900,000	3,780,000	4,680,000	11,250,000

Internal Trade.—This has multiplied ten-fold since 1840, viz.:—

	Millions £ Sterling.			
	1840.	1860.	1880.	1894.
Agriculture	180	420	698	813
Manufactures	95	392	1,117	1,952
Forestry and fisheries	20	35	108	130
Minerals	3	30	80	94
Imports	20	75	140	136
Total	318	952	2,143	3,125

The shares that corresponded to the various sections of the Union in 1894 were approximately as follows :—

	Millions £ Sterling.				
	N. Engand.	Middle.	South.	West.	Union.
Agriculture.	32	108	207	466	813
Manufactures	312	760	147	733	1,952
Minerals	4	30	8	52	94
Forestry, &c.	10	20	49	51	130
Imports	16	43	17	60	136
Total . .	374	961	428	1,363	3,125

It is a coincidence worthy of observation that the ratio of internal trade to population is almost the same in the United States as in the Mother Country, being £44 per head in the former, £42 in the latter. In the above table for 1894 the value of manufactures is supposed to have been the same as in 1890, no later returns being available.

Railways.—The first line in the New World was from Boston to Quincey, 4 miles, opened in 1827. The construction and cost since then have been as follows :—

Period.	Miles.	Cost, Millions £ Sterling.
1827-55	18,370	127
1856-75	55,730	566
1876-95	106,900	1,567
68 years	180,000	2,260

During the last twenty years the amount of capital expended in making railways averaged 78 millions sterling per annum, or 1 million dollars daily ; that is about 2 cents, or 1 penny a day for every inhabitant during the whole term. But for the construction of railways on so vast a scale it would have been impossible to open up the Far West. The cultivated area progressed with each mile of railway laid down, as may be seen if we compare the farming area in square miles with the mileage of railways, thus :—

Year.	Miles Rail.	Farms, Sq. Miles.	Rail to Sq. Miles.
1850 . . .	9,020	177,000	51 to 1,000
1870 . . .	52,920	295,000	177 " "
1890 . . .	167,000	560,000	300 " "

Thus in forty years the construction of 158,000 miles of railway contributed to bring under cultivation 245 million acres; that is 1600 acres for each mile of railway built. The average value of improved land by the census of 1890 was 37 dollars per acre, so that the area improved for each mile of rail represented a value of \$59,000, and as the cost of railways averaged \$63,000 per mile, it may almost be said that the extended area of farming land paid the cost of the lines built. Again, the gross product per acre in 1890, in the United States, averaged \$10 $\frac{1}{2}$, which upon the area won to cultivation in forty years means 2570 million dollars, or 535 millions £, equal to an annual dividend of 25 per cent. on the capital sunk in the lines. In 1894 the United States had a mile of railway for 400 inhabitants, whereas the average in Great Britain, France, and Germany is only a mile for 1800. The increase of population since 1890 has averaged 1,400,000 souls yearly, so that in order to keep up the present ratio of mileage to population it will be necessary to go on constructing 3500 miles a year, and this is about the actual rate of progress. The chief increase of railways since 1870 has been in the Western States, viz.:—

Year.	Miles of Railway Open.				
	N. England.	Middle.	South.	West.	Union.
1870 .	4,490	10,580	12,560	25,290	52,920
1892 .	6,920	21,100	44,210	103,000	175,230

The traffic per mile on American railways is much less than in Great Britain or France, but the profit as compared with capital is almost the same, viz.:—

	Receipts, £.	Expenses, £.	Profit, £.	On Capital.
United States .	1,270	867	403	3·22
United Kingdom .	4,034	2,259	1,775	3·80
France . .	2,195	1,253	942	3·50

Rolling-stock in the United States comprises 36,000 locomotives, 31,000 passenger cars, and 1,160,000 goods wagons. The goods traffic is enormous: reduced to the denominator of tonnage carried 100 miles, it is equal to 870 million tons; as compared with population it is six times per head more than

in Great Britain, eight times more than in France. The railways of the United States employ 874,000 hands, of whom 3 per thousand are killed, and 35 per thousand injured, yearly.

Banks and Money.—The United States Bank was founded in 1790 with a capital of 2 millions sterling, and collapsed in the crisis of 1837, when every bank in the Union closed its doors. Banking business grew with great rapidity from 1850 till 1860, but the civil war threw everything into confusion, forced currency being proclaimed in 1862. In order to carry on the war the Government had to make repeated issues of Greenbacks, the currency being thus raised from 43 to 205 millions sterling. This caused such a rapid depreciation that the paper-dollar in July 1864 fell to 39 cents, that is $2\frac{1}{2}$ paper-dollars were given for 1 of gold. At the conclusion of the war, however, the currency quickly rose to 67 cents, a premium of 50 per cent. on gold, and ultimately specie payments were resumed in 1880. The latest complete returns for banking are those of 1887, from which it appears that business grew sixteen-fold since 1830, showing as follows:—

Year.	Millions & Sterling.			Total.
	Capital.	Deposits.	Issue.	
1830 . . .	31	12	13	56
1887 . . .	175	712	36	923

It was ascertained in 1890 that 70 per cent. of the discount business of the Union was done by National Banks, 30 per cent. by State and private banks, and on this basis the discounts for 1893 would be approximately as follows:—

States.	Millions & Sterling.			Total.
	National.	Other Banks.	Total.	
New England	75	32	107	
Middle	152	65	217	
South	33	14	47	
West	121	52	173	
Total	381	163	544	

In October 1894 there were 3755 National Banks with assets amounting to 720 millions sterling: if we suppose the State and

private banks to be as in 1890, that is as thirty to seventy, with respect to the former, their assets would reach 310 millions, making a total banking property for the Union of 1030 millions sterling, say £15 per inhabitant, as compared with £25 in Great Britain. The quantity of money in the United States has quintupled in forty years, showing as follows :—

Year.	Millions £ Sterling.				£ per Inhab.
	Coin.	Paper.	Total.		
1854 . . .	53	39	92		3·5
1894 . . .	261	243	504		7·4

The ratio of money per inhabitant is now £7½, as compared with £4½ in Great Britain, but the actual quantity in use is much less than shown above, the Treasury holding nearly one-third. The currency in 1894 was made up as follows :—

	Millions £ Sterling.				
	Gold.	Silver.	Bank- notes.	Treasury- notes.	Total.
Circulation . . .	103	23	42	178	346
Treasury . . .	27	108	1	22	158
Total . . .	130	131	43	200	504

Of the currency actually in use it appears that two-thirds are paper-money, and of the money in the Treasury two-thirds are silver, which is worth only half the nominal value.

EARNINGS AND WEALTH

The earnings of the people at various dates were approximately as follows :—

	Millions £ Sterling.				
	1840.	1860.	1870.	1880.	1894.
Agricultural . . .	108	252	297	420	488
Manufacturing . . .	48	196	353	559	976
Mining . . .	3	30	60	80	94
Forestry, &c. . .	20	35	83	108	130
Trade . . .	32	95	142	214	313
Transport . . .	33	99	148	224	327
House-rent . . .	31	66	96	162	267
Domeatics . . .	21	44	64	108	178
Public service . . .	5	11	40	42	60
Professions . . .	30	83	120	192	283
Total . . .	331	911	1,323	2,109	3,116

Mr. Edward Atkinson's estimate of earnings for 1880 was 2080 millions sterling, or 1½ per cent. less than the figure in the above statement. The total for 1894 is equal to £44 per inhabitant, against £36 in the United Kingdom. It is to be observed that earnings have increased much faster than population, the ratio in 1840 having been only £17 per head. In the following table are shown approximately the earnings in the various sections of the Union under the principal heads:—

	Millions £ Sterling.				
	N. England.	Middle.	South.	West.	Union.
Agricultural . .	19	65	124	280	488
Manufacturing . .	156	380	74	366	976
Mining . .	4	30	8	52	94
Forestry, &c. .	10	20	49	51	130
Trade . .	38	96	43	136	313
Transport . .	40	100	45	142	327
House-rent. .	30	98	30	109	267
Domestics . .	20	65	20	73	178
Professions, &c. .	39	106	49	149	343
Total . .	356	960	442	1,358	3,116

The earnings per inhabitant in the above sections are approximately as follows:—

States.	Agricultural.	Manufacturing.	Various.	Total, £.
New England . . .	3·7	30·6	35·5	69·8
Middle . . .	4·2	24·7	33·4	62·3
South . . .	6·2	3·7	12·1	22·0
West . . .	9·6	12·6	24·4	46·6
Union . . .	7·0	14·0	23·0	44·0

In the Southern States the average is only half what it is for the Union in general, which is partly explained by the fact that one-third of the population in those States consists of negroes.

Wealth.—The census returns show that wealth has increased nine-fold in forty years, the amounts being as follows:—

	Millions £ Sterling.				
	1850.	1860.	1870.	1880.	1890.
Urban . .	680	1,704	3,156	6,570	10,220
Agricultural .	826	1,662	1,854	2,522	3,330
Total . .	1,486	3,366	5,010	9,092	13,550

Agricultural wealth, in the above table, comprises farms, cattle, and implements; all else is urban: in 1850 the former greatly exceeded the latter, but in 1890 urban wealth constituted three-fourths of the total. The average yearly accumulations were as follows:—

Period.	Millions £ Sterling.			£ per Inhabitant.
	Agricultural.	Urban.	Total.	
1851-70 . . .	51	125	176	5·7
1871-90 . . .	74	353	427	8·5

If it be supposed that the annual accumulation of wealth has been the same since 1890 as during twenty preceding years, that is £8½ per inhabitant, the actual wealth of the Great Republic will now amount to 16,350 millions sterling, comparing with population thus:—

Year.	Population.	Millions £.	£ per Inhab.
1860	23,200,000	1,486	64
1870	38,600,000	5,010	130
1890	62,600,000	13,550	216
1895	69,700,000	16,350	234

The census of 1890 shows that 60 per cent. of the wealth accumulated since 1870 was in the Western States, the wealth of the various sections showing as follows:—

	Millions £ Sterling.					Total.
	N. England.	Middle.	South.	West.		
1870	674	2,019	589	1,728	5,010	
1890	1,088	3,710	2,068	6,684	13,550	
Increase	414	1,691	1,479	4,956	8,540	

The annual accumulation in the above twenty years averaged in English money per inhabitant as follows: 98 shillings in the Southern States, 101 in New England, 140 in the Middle States, and 255 in the Western; the general average for the Union having been, as already stated, 170 shillings yearly per inhabitant. The shares of wealth corresponding to the

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various sections, according to the census of 1890, were as follows :—

States.	Millions & Sterling.				
	Farms.	Railways.	Buildings.	Sundries.	Total.
New England . . .	122	74	520	372	1,088
Middle . . .	548	245	1,723	1,194	3,710
South . . .	610	447	515	496	2,068
West . . .	2,050	1,044	1,915	1,675	6,684
Total ¹ . . .	3,330	1,810	4,673	3,737	13,550

If the above items be distributed according to population, the result will be :—

States.	£ per Inhabitant.				
	Farms.	Railways.	Buildings.	Sundries.	Total.
New England . . .	26	16	111	78	231
Middle . . .	39	17	122	84	262
South . . .	33	24	28	27	112
West . . .	81	41	75	66	263
Union . . .	53	29	75	59	216

The increment of wealth, as already shown, between 1870 and 1890 was 8540 millions, being a yearly average of 427 millions sterling : taking the working year at 300 days, this was a daily accumulation of £1,400,000, equal to 7 pence per head of the mean population in that interval.

Assuming the wealth of the United States, as before stated, to have reached 16,350 millions in 1895, it was made up approximately as follows :—

States.	Millions & Sterling.				
	Farms.	Railways.	Buildings.	Sundries.	Total.
New England . . .	142	90	595	460	1,287
Middle . . .	646	310	1,967	1,474	4,397
South . . .	713	556	591	610	2,470
West . . .	2,641	1,304	2,182	2,069	8,196
Union . . .	4,142	2,260	5,335	4,613	16,350

Land.—The value of farming land has varied exceedingly in the last half-century : the extent of improved land and the

¹ In a paper read by me before the British Association, at Bath, in 1888, I ventured to predict that the American census of 1890 would show the wealth of the United States to average £212 per inhabitant : the result of the census gave £216, that is 2 per cent. over my prediction.

value of the farms (exclusive of cattle and implements) were as follows :—

Year.		Millions of Acres.	Millions \$.	\$ per Acre.
1850	.	113	3,272	29
1860	.	163	6,645	41
1870	.	189	8,069	43
1880	.	285	10,197	36
1890	.	358	18,279	37

The average price per acre in 1890 was 10 per cent. less than it was thirty years before. The results of census valuations in 1850, 1870, and 1890 gave the following average prices for improved land in the several sections of the Union :—

Year.	\$ per Acre.				
	New England.	Middle.	Southern.	Western.	Union.
1850	34	46	19	28	29
1870	42	74	21	45	43
1890	44	63	23	39	37

The price in New England has risen since 1870, as also in the Southern States, but on the whole there has been a fall of 14 per cent.

House Property.—The Commissioners' report in 1880 estimated churches, schools, and other public edifices at one-sixth of the total value of buildings : following this basis, the value of house property in the various parts of the republic in 1890 was as follows :—

States.	Millions \$.			House Property. \$ per Inhab.
	Buildings.	Public Buildings.	Houses.	
New England	2,495	416	2,079	442
Middle	8,271	1,378	6,893	487
South	2,470	412	2,058	112
West	9,196	1,533	7,663	302
Union	22,432	3,739	18,693	300

The average of house property per inhabitant was £62 sterling, as compared with £53 in the United Kingdom.

FINANCES

Revenue multiplied 23-fold between 1840 and 1890, receipts and expenditure showing thus:—

	1840, £.	1860, £.	1890, £.	1895, £.
Receipts . . .	4,100,000	11,600,000	96,700,000	81,300,000
Expenditure . . .	5,100,000	13,100,000	74,700,000	90,200,000

Before the civil war of 1861 the incidence of taxation ranged from 5 to 7 shillings per head of the population, but it quadrupled after the war. The finances of thirty-five years may be summed up thus:—

	1861-70.	1871-80.	1881-90.	1891-95.	85 years.
Revenue . . .	432	595	729	440	2,196
Expenditure . . .	773	519	505	452	2,249

In the twenty-three years from 1871 to 1893 revenue exceeded expenditure by 311 millions sterling, this surplus being applied to reduction of debt. The years 1894-95 showed expenditure greatly in excess of revenue. The principal items of revenue and expenditure in the last twenty-five years were as follows:—

	Millions £.		Millions £.
Customs	940	Military	673
Excise	655	Debt	347
Sundries	169	Government	456
Revenue	<u>1,764</u>	Expenditure	<u>1,476</u>

In the above table military expenditure includes 356 millions sterling paid as pensions, for the most part arising out of the war of 1861-65, so that in fact the real expenditure for army and navy in the said term of twenty-five years was only 317 millions, or about 13 millions sterling per annum. Before the civil war the debt was so low that the annual interest was only £800,000, but in 1865 interest rose to £31,500,000: at present it is only £5,800,000. In 1894 the revenue fell to 78 millions sterling, showing a deficit of 14

millions, this being the first deficit since 1874. At present the United States expenditure is 90 millions sterling, or 26 shillings per inhabitant, as compared with 50 shillings in Great Britain and 60 in France.

Local taxation doubled between 1870 and 1890, rising from 51 to 98 millions sterling, viz. :—

Year.	Millions £ Sterling.					Total.
	N. England.	Middle.	South.	West.		
1870	8·0	16·0	7·5	19·5	51·0	
1890	11·0	23·7	11·9	46·4	98·0	

Although the ratio of local taxation for the Union rose in the above interval from 26 to 32 shillings per inhabitant, the incidence in 1890 was really less than in 1870 (as compared with wealth), having declined from 1·97 to 1·85: in other words the incidence was relatively 6 per cent. less in 1890. The rate of taxation was as follows :—

Year.	\$ per \$1,000 of Property.					Union.
	N. England.	Middle.	South.	West.		
1870	16·1	19·7	16·7	24·2	19·7	
1890	14·8	17·0	14·0	22·9	18·5	

The ratio of taxation is necessarily higher in the Western States than in the rest of the Union, because the population is more scattered, and the creation of new cities and towns brings with it corresponding expenditure.

If we add together national and local taxation, apportioning the former equally per head of the population, and compare the gross amount with earnings we find :—

States.	Earnings, Millions £.	Taxes, Millions £.	Tax Ratio.
New England	356	17	4·8
Middle	960	47	4·9
South	442	35	8·0
West	1,358	79	5·8
Union	3,116	178	5·7

The incidence of all taxation compared with earnings shows a general ratio of $5\frac{1}{4}$ per cent., as compared with $8\frac{1}{4}$ per cent.

in 1870; that is to say it is now relatively one-third lighter than in 1870.

Debt.—National debt in 1855 averaged only 1½ dollar, say 5 shillings per inhabitant, but the civil war of 1861–65 involved such enormous expenditure that it rose in 1866 to £16 per head. The amount increased during the war at the rate of 112 millions sterling per annum. In a period of twenty years after the war it was reduced at the rate of 16 millions sterling yearly, and in the ensuing seven years down to 1893 about 13 millions yearly. The interest on debt paid by each inhabitant has declined from 17 shillings in 1867 to 20 pence in 1894, a reduction of 90 per cent. Meantime local debt has risen 30 per cent. since 1870, amounting in 1890 to 237 millions sterling. Thus the total indebtedness of the United States at present reaches 412 millions sterling, or £6 per inhabitant. Allotting the national debt equally per head, and adding it to the local debt of the various sections of the Union, we find that the ratio per inhabitant in 1890 was little more than one-third of what it was in 1870, viz.:—

States.	Total Debt, Millions £.		£ per Inhabitant.	
	1870.	1890.	1870.	1890.
New England . . .	73	44	21	9
Middle	195	123	20	9
South	207	104	18	6
West	223	151	16	6
Total	698	422	18	7

The burthen of debt, as compared with the wealth of the nation, was nearly five times as heavy in 1870 as in 1890, the ratio showing as follows:—

Year.	Wealth, Millions £.	Debt, Millions £.	Debt Ratio. per Cent.
1870 : : :	5,010	698	14
1890 : : :	13,550	422	8

In 1895 the total debt was approximately 425 millions, wealth 16,350 millions sterling, leaving debt equal to 2½ per cent. of wealth, the average in Europe being 8½ per cent.

XIX

CANADA

THE Dominion of Canada, as it is termed, bears much resemblance to a federal republic, and may be said to consist geographically of four provinces: Quebec or Lower Canada; Ontario or Upper Canada; Acadia, comprising Nova Scotia, New Brunswick, and Prince Edward Island; and the North-West, including Manitoba, Hudson's Bay, and British Columbia, viz.:—

	Sq. Miles.	Population.	Per Sq. Mile.
Quebec . .	228,000	1,490,000	6
Ontario . .	220,000	2,110,000	10
Acadia . .	50,000	880,000	18
North-West . .	2,812,000	360,000	
Total . .	3,310,000	4,840,000	

The area is about the same as that of the United States, the population equal to what the United States had in 1800. Although the number of inhabitants has quintupled since 1830 it is still very small, less than that of the State of Pennsylvania, and so sparse that even in the old territory of Canada proper it averages 8 per square mile, as compared with 23 in the United States. The last census, which distinguished the population among four great classes, showed that British formed 37, French 29, Irish 23, and other races 11, per cent. of the total. Population increases slowly, owing to the constant stream of emigration to the United States, for it is remarkable that the Great Republic has 980,000 Canadians, while Canada has only 80,000 Americans. One-half of the tide of immigration is lost in the same way, as it

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appears that of 2,425,000 persons who arrived from Europe in the interval of 1851-1891 no fewer than 1,310,000 proceeded over the frontier to the United States, only 1,115,000, or 46 per cent., remaining in Canada. What is still more surprising is that the census of 1891 showed the number of European survivors to be only 590,000, or little more than half of the above number of persons who settled in Canada in the said interval of forty years. The native element is stronger here than in the United States, the foreign-born population being in Canada only 13 per cent. of the total, and in the United States 15 per cent. Moreover, the European element is declining in Canada, the ratios in 1 thousand of population in 1891 comparing with 1881 as follows:—

Year.	Canadians.	British and Irish.	Foreigners.	Total.
1881 . . .	859	111	30	1,000
1891 . . .	866	101	33	1,000

Another feature revealed by last census is the rapid growth of urban population, which is now 29 per cent. of the total, against 19 per cent. in 1871. In the interval of twenty years urban grew $6\frac{1}{2}$ times as fast as rural population, viz.:—

	1871.	1891.	Increase per Cent.
Urban . . .	685,000	1,390,000	103
Rural . . .	2,950,000	3,440,000	16
Total . . .	3,635,000	4,830,000	33

It is a remarkable coincidence that the United States census of 1890 shows the urban population to be 29 per cent. of the total, and the Canadian census of 1891 the same ratio.

The occupations of Americans and Canadians compare approximately as follows:—

	Hands.		Ratio.	
	United States.	Canada	United States.	Canada
Agriculture . . .	10,740,000	1,140,000	34·0	47·0
Manufactures . . .	5,950,000	540,000	19·0	22·5
Trade, &c. . .	14,920,000	740,000	47·0	30·5
Total . . .	31,610,000	2,420,000	100·0	100·0

The working-power of Canada has multiplied thirteen-fold in half a century, viz. :—

Year.	Millions of Foot-tons Daily.			Foot-tons per Inhabitant.
	Hand.	Horse.	Steam.	
1840 . . .	120	600	40	760 540
1870 . . .	330	2,400	1,000	3,730 1,090
1894 . . .	450	4,500	4,610	9,590 1,920

This is (excepting Australia) the highest ratio in the world of energy to population, being 70 foot-tons more than the American and 350 over the British : it is due mainly to the development of steam-power, especially in railway locomotives, viz. :—

Year.	Steam Horse-power.			Total
	Fixed.	Locomotives.	Steamboats.	
1840 . . .	3,000	2,000	5,000	10,000
1870 . . .	100,000	100,000	50,000	250,000
1894 . . .	320,000	600,000	240,000	1,160,000

AGRICULTURE

In the first quarter of the present century the only agriculturists were the French 'habitans,' who had a chain of farms, 400 miles long, on the banks of the St. Lawrence, and produced grain much in excess of home needs ; we find that down to the year 1830 the annual shipments of wheat to England averaged 25,000 tons. The system of giving free farm-lots of 200 acres to military and other settlers was pursued by the British Government from 1816 till 1826, but in the latter year auction-sales were adopted, at an upset price of 4 shillings an acre, the purchaser stipulating to pay the amount in four instalments, stretching over four years, free of interest. The lands being thus thrown open to the public, thousands of settlers flocked to Upper Canada (now called Ontario), the progress of which province is shown thus :—

	1842.	1852.	1891.
Population . . .	486,000	952,000	2,110,000
Acres tilled . . .	1,928,000	3,698,000	8,110,000

As years rolled on, the backwoods were penetrated by Scotch and Irish farmers, and in 1872 a colony of 500 Russian Mennonites settled in Manitoba, followed three years later by 280 Icelanders. When the Viceroy, Lord Dufferin, visited these new settlements in 1877, he found that they had received large accessions from home, the total of Mennonites and Icelanders already reaching 9000 souls : he described them as thrifty and prosperous people. The country west of Lake Winnipeg had been explored by Dr. Cheadle and Lord Monk so far back as 1865, but its utility for agriculture was not recognised till visited in 1878 by Mr. Brassey, who stated that: "In Manitoba you may drive a gig for a thousand miles straight over open prairie, suitable for wheat-growing." All the North-west Territory was held by the Hudson's Bay Company, by charter from Charles II., till 1869, when it was annexed to the Dominion, having an arable area, says Mr. Hall, of 237 million acres. The grain-crop of Canada has more than doubled since 1871, showing as follows:—

Year.	Tons of Grain.				
	Wheat.	Oats.	Barley.	Maize, &c.	Total.
1871 .	420,000	1,140,000	300,000	220,000	2,080,000
1892 .	1,200,000	2,600,000	440,000	780,000	5,020,000

The crop of 1892 comprised 3,200,000 for Ontario, 650,000 for Manitoba, and 1,170,000, tons for the other provinces. Ontario is the backbone of Canada as regards farming : it stands for 64 per cent. of the grain, and 45 per cent. of the live-stock of the Dominion, and its farms in 1887 were valued at 201 millions £ sterling. The productive area of Canada rose nearly 70 per cent. in ten years ending 1891, viz.:—

Acres under	1881.	1891.	Increase.
Tillage . .	15,110,000	19,900,000	4,790,000
Pasture . .	6,390,000	15,290,000	8,900,000
Total . .	21,500,000	35,190,000	13,690,000

It is very surprising that whereas the yield of grain per acre in Canada is much heavier than in the United States,

and that 47 per cent. of Canadians are engaged in farming pursuits, as compared with 34 per cent. in United States, the production of food in reference to population is much less in Canada. The only explanation appears to be that more improved methods and machinery are in use in the United States : the ordinary yield is as follows :—

	Bushels per Acre.		
	Wheat.	Barley.	Oats.
Ontario . . .	17·6	25·7	34·6
United States . . .	12·8	21·4	26·1

The total area under farms in 1891 was $60\frac{1}{2}$ million acres, an area equal to that of Great Britain, but only 3 per cent. of Canada. The area under crops, as already shown, is almost 20 million acres, just the size of Ireland, being as follows, in acres :—

Wheat	2,720,000	Ontario	8,110,000
Oats	4,130,000	Quebec	5,180,000
Maize, &c. . . .	2,900,000	Manitoba	2,830,000
Sundries	10,150,000	Acadia, &c. . . .	8,780,000
Total	19,900,000	Total	19,900,000

Of late years there has been a lull in grain-growing, because dairy-farming and the production of meat are found more profitable. The number of cheese-factories rose from 710 in 1881 to 1570 in 1891. The decline of tillage has been most marked in Lower Canada. Reducing all food to a grain denominator, we find as follows :—

	Tons.		Equiv. in Grain.	
	1881.	1892.	1881.	1892.
Grain	3,100,000	5,020,000	3,100,000	5,020,000
Potatoes	1,200,000	1,200,000	400,000	400,000
Meat	250,000	310,000	2,000,000	2,480,000
Total			5,500,000	7,900,000

The above total was equal to 50 bushels in 1881, and 64 in 1892, per inhabitant, as compared with 75 in the United

States. The value of all rural products in 1894 was approximately as follows :—

	Millions £ Sterling.					
	Grain.	Sundries.	Meat.	Dairy, &c.	Total.	
Home use . . .	·17	12	9	9	47	
Export . . .	4	...	2	4	10	
Total . . .	21	12	11	13	57	

The export of food in 1894 comprised 880,000 tons of grain, 60,000 of meat, and 70,000 of cheese and butter, besides 62 million eggs. The increased attention that is given to pastoral interests appears when we compare the present numbers of live-stock with those of twenty years ago, viz. :—

Year.	Horses.	Cattle.	Sheep.	Pigs.	Value, £.
1871 .	860,000	2,690,000	3,300,000	1,410,000	33,800,000
1893 .	1,440,000	4,240,000	3,460,000	1,700,000	46,300,000

The importance of the several provinces as regards tillage, live-stock and agricultural capital is shown approximately, in aliquot parts, as follows :—

	Grain.	Live-stock.	Capital.
Ontario	64·0	50·2	59·2
Quebec	10·2	24·0	22·0
Acadia	4·0	13·1	10·3
Manitoba, &c. . .	21·8	12·7	8·5
Total	100·0	100·0	100·0

Rural interests have been promoted by the Homestead Law of 1870, similar to that passed by the United States in 1862. Free farm-lots of 200 acres are given to settlers in the North-West, with the obligation to build a log-hut and bring 30 acres into cultivation. In twenty years, ending December 1893, the number of free farms permanently taken up by settlers (exclusive of those abandoned or cancelled) was 41,760, covering an area of 6,700,000 acres. Moreover, in Canada proper public lands are still sold to immigrants or others at prices ranging from 4 shillings per acre upwards; these sales in the interval from 1887 to 1893 amounted to 1,350,000, and realised £470,000, say 7 shillings an acre. The railway

companies also sell lands, usually at much higher prices, their sales in 1893 reaching 114,000 acres, at an average of 14 shillings per acre. There are in all Canada 59,000 farms, with a productive area of 35 million acres, say 60 acres each : dividing the annual value of products among the number of farms it gives an average of £97 to each, or 33 shillings per acre, as compared with 107 shillings in Great Britain. The agricultural capital is approximately as follows :—

	Millions £ Sterling.					
	Ontario.	Quebec.	Acadia.	Manitoba.	North-West.	Total.
Land .	140	50	23	12	5	230
Cattle, &c.	40	17	9	4	5	75
Total	180	67	32	16	10	305

This gives an average value of £517 to each farm, as compared with £730 in the United States and £880 in France. The annual product is 19 per cent. on capital in Canada and 19½ per cent. in the United States.

FORESTS AND FISHERIES

More than one-third of the Dominion is under timber, viz. :—

	Square Miles.			
	Ontario.	Quebec.	North-West.	Total.
Forest .	102,000	116,000	1,032,000	1,250,000
Total area .	220,000	228,000	2,862,000	3,310,000

The quantity of timber cut in 1891 was 41 million tons, of which 12 millions were exported. In 1892 the railways carried 4½ million tons of timber, from which it would appear that not less than 30 million tons were floated down the rivers on rafts. There are at present 71,000 square miles of forest leased to woodcutters, producing an annual revenue to the Canadian Government of £600,000, say 3 pence an acre. The value of timber felled is officially estimated at £16,500,000, including what is exported, viz., £4,100,000 worth.

The fisheries are the most extensive in the world, embracing 5600 miles on the Atlantic, and 7200 on the Pacific, sea-board, besides 51,000 square miles of internal waters. In twenty-five years ending 1894 the aggregate product has been as follows:—

	£ Sterling.		£ Sterling.
Cod . . .	20,600,000	Nova Scotia . .	34,800,000
Herring . . .	10,100,000	New Brunswick . .	15,100,000
Lobsters . . .	9,300,000	Quebec . .	10,400,000
Salmon . . .	7,900,000	British Columbia . .	7,700,000
Mackerel . . .	7,500,000	Ontario . .	5,100,000
Haddock, &c . . .	23,700,000	Prince Edward Is., &c. .	6,000,000
Total . . .	79,100,000	Total . . .	79,100,000

The fisheries in 1894 yielded £4,300,000, against £3,700,000 in 1884, the returns for 1894 showing as follows:—

	Fishermen.	Tons, £.	£ per Man.
Nova Scotia . . .	25,500	1,360,000	53
New Brunswick . . .	11,700	910,000	78
British Columbia . . .	12,700	820,000	64
Quebec . . .	12,100	480,000	40
Ontario . . .	4,200	340,000	81
Prince Edward Island, &c. .	4,500	400,000	89
Total . . .	70,700	4,310,000	61

The general average for Canadian fishermen is £61, against £49 for the fishermen of the United States. The fish taken in 1894 weighed 180,000 tons, being an average of $2\frac{1}{2}$ tons per fisherman.

MANUFACTURES

In 1830 the manufacturing industry consisted of 1580 sawmills, 1090 other mills, and 7 foundries, besides 1300 domestic looms which turned out yearly 4 million yards of woollen and linen stuffs: the output hardly summed up a value of 5 millions sterling. In recent years the progress made is shown by the last three census reports, viz.:—

Year.	Operatives.	Wages, £.	Output, £.	Output per Hand.
1871 . . .	188,000	8,100,000	46,000,000	£244
1881 . . .	254,000	11,900,000	64,100,000	252
1891 . . .	370,000	20,700,000	98,200,000	265

Textile factories consumed in 1891 over 7000 tons of wool and 20,000 of cotton, the value of goods produced being not quite 5 millions sterling. The various provinces show as follows :—

	Capital, £.	Hands.	Wages, £.	Output, £.
Ontario	36,100,000	166,000	10,300,000	49,500,000
Quebec	24,300,000	117,000	6,200,000	31,200,000
Acadia	7,400,000	62,000	2,700,000	11,300,000
North-West.	5,200,000	25,000	1,500,000	6,200,000
Total	73,000,000	370,000	20,700,000	98,200,000

The factories are valued at £35,600,000, say 36 per cent. of the value of goods manufactured in a year, the ratio in this respect in the United States being 33 per cent. The total manufacturing output of Canada, as we have seen, rose from 64 millions in 1881 to 98 millions sterling in 1891, every branch, except leather, showing a marked advance, viz :—

	1881.	1891.
Food	£13,200,000	£19,800,000
Sawmills	11,100,000	17,500,000
Clothing	8,500,000	13,800,000
Implements	7,600,000	12,800,000
Furniture	5,200,000	9,300,000
Leather	7,600,000	7,200,000
Liquor	4,300,000	7,000,000
Sundries	6,600,000	10,800,000

There has been a rise of 19 per cent. in wages, namely from £47 per hand in 1881 to £56 in 1891. If we compare wages, cost of raw material, and value of output per hand, with the same items in the United States, we find as follows :—

	$\frac{\text{£ Sterling per Operative.}}$		
	Wages.	Raw Material.	Output.
Canada	56	142	265
United States	101	228	415

The balance which remains to the factory-owner in Canada, after paying wages and cost of raw material is £67 per hand, in the United States £86, and it is out of this balance that he must defray rent, motive-power, lighting, machinery, and all other expenses.

MINING

The coalfields of Nova Scotia and New Brunswick yield 3 million tons yearly, besides 750,000 raised in the North-West Territory; the latter province contains one of the great coal-fields of the world, covering an area of 65,000 square miles, as large as the island of Great Britain. The production of coal has doubled since 1883, but Canada still imports 3 million tons from foreign countries. Gold is found in British Columbia and Nova Scotia, but the annual production hardly reaches £400,000, whereas it exceeded £800,000 thirty years ago: about 200,000 tons of auriferous quartz were crushed in 1895, which yielded 105,000 oz., equal to £2 per ton, or seven times as much as the Russians obtain from the quartz of their Siberian gold-mines.

The mineral product of 1895 compares with the average for the years 1886-88 as follows:—

	Quantity.		Value, £.	
	1886-88.	1895.	1886-88.	1895.
Coal, tons . . .	2,410,000	3,560,000	1,060,000	1,640,000
Gold, oz. . .	66,000	105,000	250,000	400,000
Silver, " . .	350,000	1,780,000	60,000	240,000
Nickel, lbs. . .	...	3,500,000	...	280,000
Petroleum, brls. .	660,000	805,000	120,000	250,000
Lead, tons . . .	...	10,000	...	160,000
Sundries . . .	...	...	1,110,000	1,730,000
Total . . . . .	...	...	2,600,000	4,700,000

There are 15,000 miners, of whom 6000 in Nova Scotia, 5000 in British Columbia, and 4000 in Canada Proper. The Nova Scotian colliers raised 404 tons each in 1895, as compared with 448 tons per man (1893) in the United States.

COMMERCE

As regards foreign trade, it has quadrupled since 1851, and imports have always been in excess of exports, a proof of the prosperity of the colony:—

Year.	Imports, £.	Exports, £.	Total, £.
1851 .	7,600,000	5,200,000	12,800,000
1894 .	23,500,000	24,500,000	48,000,000

The ratio of foreign trade to population is still very small, only £10 per inhabitant, and would be fully double as much, but for vexatious tariffs on the part of Canada. The returns for five years ending December 1893 give the following averages :—

	Millions £ Sterling.			
	Imports from.	Exports to.	Total.	Ratio.
Great Britain .	9	11	20	44:4
United States .	11	9	20	44:4
Other countries .	4	1	5	11:2
Total . . .	24	21	45	100:0

Commercial relations with the mother country and the United States are equal, those with other countries being insignificant.

Shipping.—Canada has a larger merchant navy than many of the kingdoms of Europe, with a carrying-power exceeding 1,500,000 tons, and representing a value of 7 millions sterling. Its carrying-power has quadrupled in half a century, viz. :—

Year.	Tons Register.			Tons of Carrying-power.
	Steam.	Sail.	Total.	
1841 . . .	5,000	345,000	350,000	365,000
1895 . . .	250,000	580,000	830,000	1,580,000

Internal Trade.—This has nearly doubled in twenty-two years, showing as follows :—

	Millions £ Sterling.	
	1871.	1894.
Agriculture	30	57
Manufactures	46	98
Minerals	1	5
Forestry	12	17
Fisheries	2	4
Imports	16	24
Total	107	205

In 1894 the internal trade was equal to £40 per inhabitant, against £44 in the United States.

Railways.—The first line was opened in 1836, from Laprairie on the St. Lawrence to St. John's, near Lake Champlain, 15 miles. The Grand Trunk line from Quebec to Toronto, 850 miles, was opened in 1856, and when the Dominion was formed, in 1867, the total length of railways was 2260 miles. Since then the Canadian Pacific and others to the length of 13,740 miles have been built, at a cost of 147 millions sterling. The actual Grand Trunk system is an amalgamation of 24, the Canadian Pacific of 21, lines. In June 1895 Canada had 16,000 miles, representing an outlay of 186 millions sterling, of which 144 were supplied by shareholders, 32 by the Dominion Government, and 10 by the local authorities. The only State railway is the Intercolonial, 1350 miles. The mileage and cost of the principal systems are as follows:—

	Miles.	£.	£ per Mile.
Canadian Pacific . .	6,170	65,500,000	10,700
Grand Trunk . .	3,160	69,600,000	22,100
Other lines . .	6,670	50,900,000	7,600
Total . .	16,000	186,000,000	11,600

The net product of all railways in 1895 was £2,910,000, equal to 1½ per cent. on the cost of construction; but if we exclude Government subsidies, and consider only the shareholders' capital of 144 millions sterling, it will be found a little over 2 per cent. The traffic of 1895 comprised 14 million passengers and 22 million tons of merchandise, which figures, being compared with those for 1875, show an increase of 170 per cent. in passengers and 290 per cent. in goods traffic in an interval of twenty years. The rolling-stock includes 2020 locomotives, of 600,000 horse-power. Traffic returns per mile compare with those of United States thus:—

	Receipts, £.	Expenses, £.	Profit, £.	Do. on Cap.
Canada . .	610	428	182	1·57
United States . .	1,270	867	403	3·22

However inadequate as an investment the result may appear, of the Canadian railways, they have been of incalculable benefit in connecting the Atlantic provinces with the Pacific,

and opening up to immigrants the vast prairies of the North-West.

Navigable Routes.—The St. Lawrence and lake system of inland navigation has a length of 2700 miles, the total of navigable rivers and canals in the Dominion being 3350 miles, in the improvement of which a sum of 12 millions sterling has been expended.

Banking.—The banking-power in 1893 was 56 millions, against 15 millions sterling in 1868. The amount of paper-money in circulation is 7 millions sterling.

EARNINGS AND WEALTH

The earnings and wealth of the Canadian people are approximately as follows:—

Earnings.	Millions £.	Wealth.	Millions £.
Agricultural . . .	34	Land . . .	230
Manufacturing . . .	49	Cattle . . .	47
Forestry . . .	17	Implements, &c. . .	28
Fisheries . . .	4	Railways . . .	186
Mining . . .	5	Shipping . . .	7
Trade . . .	20	Factories . . .	33
Transport . . .	21	Houses . . .	112
House-rent. . .	7	Furniture . . .	56
Domestics . . .	5	Merchandise . . .	103
Professions, &c. . .	21	Sundries . . .	201
Total . . .	183	Total . . .	1,003

This gives an average of £36 yearly earnings, and £196 of wealth, to each inhabitant, as compared with £44 and £234 respectively in the United States.

The earnings of the several provinces may be set down thus:—

	<i>£ Sterling (000's omitted)</i>					<i>£ per Inhab.</i>
	Agriculture.	Manufactures.	Trade, &c.	Sundries.	Total.	
Ontario . . .	19,400	24,700	20,100	22,600	86,800	41
Quebec . . .	5,800	15,600	10,800	16,200	48,400	33
Acadia . . .	3,100	5,600	6,000	13,600	28,300	33
North-West . . .	5,700	3,100	4,100	6,600	19,500	54
Total . . .	34,000	49,000	41,000	59,000	183,000	36

Land.—The official value of occupied lands, exclusive of public lands, in the province of Ontario in 1887 was 131 millions sterling, and this represented apparently 60 per cent. of the landed value of the Dominion. A previous valuation of all farming-land in Canada had been made in 1861, amounting to 102 millions sterling. The area and approximate value in 1891 compare with 1861 as follows:—

Year.	Acres.	£.	£ per Acre.
1861 . . .	13,060,000	102,000,000	7·8
1891 . . .	60,500,000	230,000,000	3·8

The average price per acre has fallen more than 50 per cent., which is not surprising, as the new farms in Manitoba and the North-West include lands that are much cheaper than in Canada Proper. The average value in the United States at the census of 1890 ranged from £4·8 in the Southern, to £13·1 in the Middle, States per acre, and was £7·7 for the whole Union, or 102 per cent. dearer than in Canada.

Houses.—Municipal assessments for 1893 show that house-property has risen 130 per cent. in twenty years, showing as follows:—

Year.	Millions £ Sterling.					Total.
	Ontario.	Quebec.	Acadia.	North-West.		
1873 . . .	22·3	15·5	9·6	1·2		48·6
1893 . . .	57·6	30·6	12·1	11·7		112·0

Toronto and Montreal make up just half the total, viz.:—

Year.	Millions £ Sterling.				Total.
	Toronto.	Montreal.	Other Towns.		
1873 . . .	9·5	13·1	26·0		48·6
1893 . . .	32·4	23·6	56·0		112·0

House-property in Toronto averages £180 per inhabitant, as compared with £160 in London, and £218 in Paris. The average value of house-property in the whole Dominion (including factories) is £29 per inhabitant, as compared with £62 in the United States.

Distribution.—The shares of wealth that correspond to the several provinces are approximately as follows:—

	Millions & Sterling.				
	Ontario.	Quebec.	Acadia.	North-West.	Total.
Farms . . .	180	67	32	26	305
Railways . . .	75	36	29	46	186
Houses and factories	75	41	16	13	145
Furniture . . .	29	16	6	5	56
Merchandise . . .	51	28	13	11	103
Sundries . . .	106	50	25	27	208
Total . . .	516	238	121	128	1,003

Canada and Belgium are equal in point of wealth. The province of Ontario in this respect comes close after Sweden, and surpasses Denmark, Switzerland, and Portugal.

The ratios of earnings and wealth per inhabitant in the several provinces are as follows:—

	Earnings. £	Wealth. £		Earnings. £	Wealth. £
Ontario . . .	41	244	Acadia . . .	33	137
Quebec . . .	33	159	North-West . . .	54	355

It happens in Canada, as in the United States, that the newly-settled and thinly-populated western districts have much higher ratios of earnings and wealth per inhabitant than the older and more populous parts. It is also observable that Quebec or Lower Canada, where the French population is largest, has a much lower ratio than Ontario or Upper Canada, the province in which Scotch predominate.

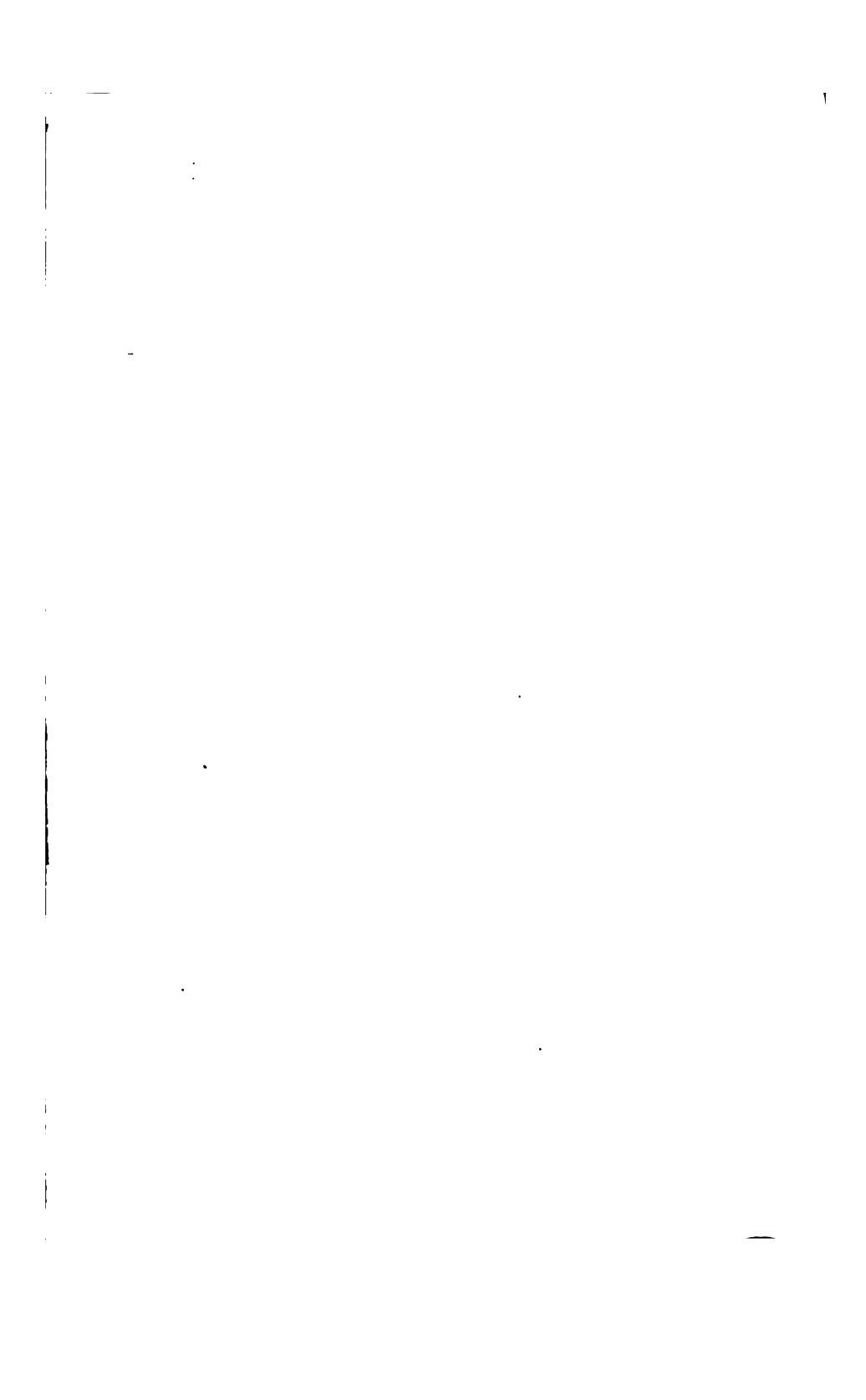
FINANCES

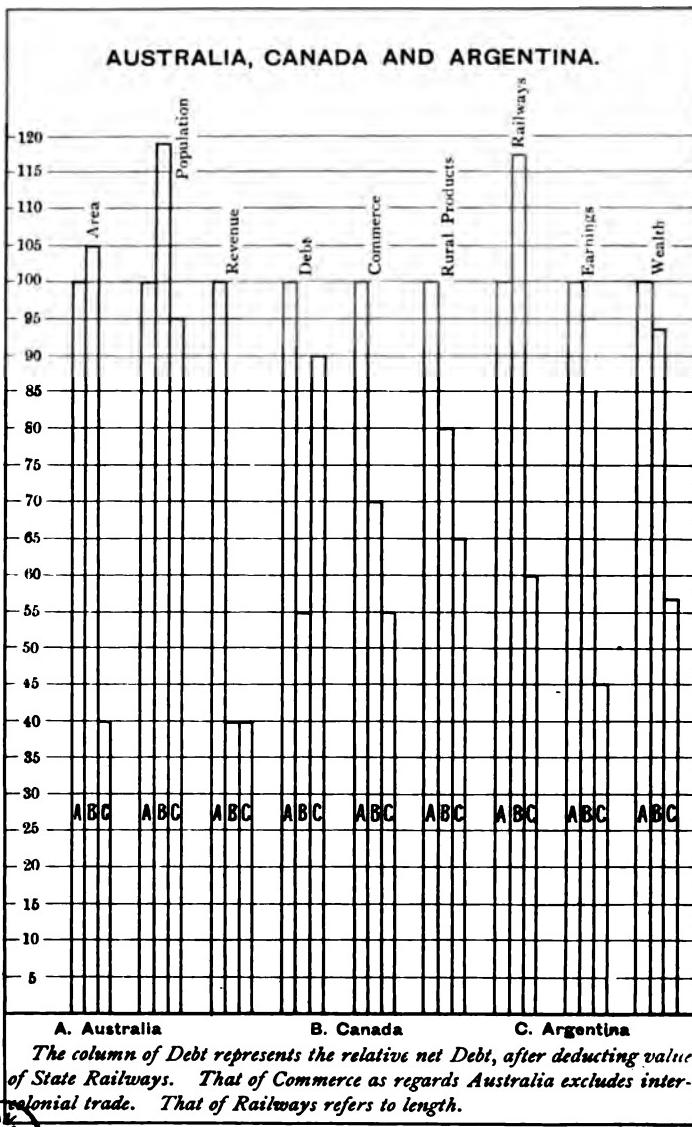
When the Dominion was created in 1867 the revenue was less than 3 millions; it is now nearly 8 millions sterling: the budgets for 1868 and 1894 compare thus:—

	Revenue, £ (000's omitted)		Expenditure, £ (000's omitted)	
	1868.	1894.	1868.	1894.
Customs . . .	1,400	4,000	Debt . . .	1,000
Taxes, &c. . .	1,400	3,600	Government	1,800
Total . . .	2,800	7,600	Total . . .	2,800
				7,800

Expenditure is really less than 7 millions sterling, as the Treasury refunds a sum of £860,000 to the various provinces in the form of subsidies, which average 40 pence per inhabitant (although this is not uniform). The amount raised by taxation is £6,200,000, to which must be added £1,600,000 for local taxes, thus summing up £7,800,000 or 4½ per cent. of the earnings of the people, and in this respect Canada compares favourably with most countries. The incidence is by no means equal, averaging 28 shillings in Acadia, 32 in Quebec, and the same in Ontario, 30 in Manitoba, and 57 per inhabitant in British Columbia, the difference being caused by local taxes.

Debt.—When the Dominion was formed in 1867 local or provincial debts were consolidated to the amount of 19 millions sterling. In July 1894 the Canadian debt was 64 millions sterling, and represented 54 millions spent on public works, viz., railways 30, canals 12, sundries 12 millions. The Inter-colonial railway is the only one belonging to the Government, and represents an outlay of 12 millions: if this were deducted from the debt the latter would be reduced to 52 millions sterling. There are, meantime, local debts that sum up £25,200,000, so that the total net debt is 77 millions, say 7½ per cent. of national wealth, being the same ratio as in the United Kingdom.





XX

AUSTRALIA

THE Australian Heptarchy is the most modern of the Anglo-Saxon nations, and its progress has been stimulated in the last forty years by the production of gold and wool on a large scale. Population has multiplied eight-fold since 1850, when it was less than that of the State of Maryland, whereas it is now nearly equal to that of the Kingdom of Holland. The figures for 1895 and 1850 compare thus:—

Year.	N. S. Wales.	Victoria.	N. Zealand.	Other Colonies.	Australasia.
1850 .	189,000	76,000	63,000	182,000	510,000
1895 .	1,280,000	1,190,000	780,000	1,040,000	4,240,000

Although this rapid increase has been in a great measure due to immigration the number of native Australians is more than two-thirds of the population, the census of 1891 showing the aliquot parts thus: Australians 69, British 20, Irish 7, Foreigners 4, per cent. It is an extraordinary feature of Australia that urban population exceeds rural, which occurs in no other country but England. The census of 1891 showed the urban ratio to be 66 per cent. in N. S. Wales; 57 per cent. in Victoria; and 54 per cent. in the whole Australian group, of the total population. The rapid growth of towns and cities in new countries is an unfavourable circumstance, and as Coghlan says "is a most unfortunate element in the progress of Australia." For example the four principal cities have grown as follows:—

Year.	Sydney.	Melbourne.	Adelaide.	Brisbane.	Total.
1861 .	96,000	140,000	18,000	6,000	260,000
1893 .	412,000	475,000	137,000	100,000	1,124,000

These four cities have in the aggregate more than quadrupled since 1861, and the rest of the population has not quite trebled. The increase of population in the seven colonies from 1861 to 1894 was 2,847,000 souls of which 62 per cent. was natural increase, 38 per cent. immigration, being made up thus :—

	New South Wales.	Victoria.	New Zealand.	Other Colonies.	Australasia.
Nat. increase .	527,000	519,000	320,000	414,000	1,780,000
Immigration .	348,000	117,000	273,000	329,000	1,067,000
Total .	875,000	636,000	593,000	743,000	2,847,000

When we consider that the wealth of Australia consists chiefly in its flocks, herds, and agricultural resources, it is surprising to find what a small proportion of the people is engaged in rural pursuits. The whole farming element is only 24 per cent. of the working population, as compared with 34 per cent. in United States and 47 per cent. in Canada. The census of 1891 showed occupations as follows :—

	Farming.	Manufactures.	Mining.	Various.	Total.
Men .	358,000	417,000	94,000	435,000	1,304,000
Women .	87,000	70,000	...	209,000	316,000
Total .	395,000	487,000	94,000	644,000	1,620,000

The working-power of Australia has trebled since 1870, viz. :—

Year.	Millions of Foot-tons Daily.			Foot-tons per Inhab.
	Hand.	Horse.	Steam.	
1870 :	170	2,350	520	3,040 1,550
1894 :	370	5,310	3,300	8,980 2,210

Steam-power in 1894 consisted of: fixed 260,000, locomotives 385,000, and steamboats 180,000 ; in all 825,000 horse-power. There is relatively less steam-power, as compared with population, than in Canada : thus 1000 Canadians have 240, and 1000 Australians 202, horse-power. Nevertheless the ratio of energy is higher in Australia, being as 2210 foot-tons per inhabitant, against 1920 in Canada, which is explained by the fact that the former country has a greater number of horses than the latter.

AGRICULTURE

Notwithstanding the predominance of pastoral interests tillage is much attended to, and the cultivated area has multiplied ten-fold in thirty-one years, showing as follows :—

Year.	N. S. Wales.	Victoria.	N. Zealand.	Other Colonies.	Australasia.
1861 .	298,000	422,000	225,000	595,000	1,540,000
1892 .	1,370,000	2,470,000	9,590,000	2,810,000	16,240,000

In 1861 the cultivated area was only 1 acre per inhabitant; at present it is 4 acres. New Zealand is vastly ahead in this respect, her area of tillage being much greater than that of the six other colonies collectively, and equivalent to 14 acres per inhabitant ; South Australia comes next, with an average of 6 acres per head. Only one-third of the cultivated area is under grain, the rest being under green crops, hay, &c. It was necessary to import grain from Chili and United States down to 1860, but since that year there has been usually a surplus every year for exportation: the average weight exported has quintupled since 1873, at present reaching 320,000 tons, or one-fifth of the crop. The average area and crops in 1893-94 were :—

	Wheat.	Other Grain.	Total.
Acres . . .	4,010,000	1,150,000	5,160,000
Tons . . .	920,000	700,000	1,620,000

The crops are very light, the above two years showing an average of 9 bushels an acre for wheat, and 24 for other grain.

Tillage products form only 30 per cent. of the annual value of farming products, pastoral amounting to 70 per cent.; the total value of products in 1893 was :—

Wool . . .	£22,400,000	Grain . . .	£9,600,000
Meat . . .	8,200,000	Hay . . .	4,800,000
Dairy . . .	6,700,000	Orchard . . .	2,600,000
Sundries . . .	11,100,000	Sundries . . .	4,500,000
Pastoral . . .	48,400,000	Tillage . . .	21,500,000

The prodigious pastoral wealth of Australia is of comparatively recent date, neither sheep, cattle nor horses being indigenous: the first were introduced by Captain Philip in 1788, namely 5 cows and 29 sheep, but the real founder of sheep-farming was Captain M'Arthur in 1797, who imported some fine Merinos from Cape of Good Hope. The flocks increased very rapidly, and in 1813 two farmers named Wentworth and Lawson crossed the Blue Mountains, 70 miles west of Sydney, and settled in the locality where Bathurst now stands. In 1825 the whole Mudgee district was covered with sheep, the colony then counting 237,000 head, and in ten years ensuing numerous squatters settled on the plains watered by the Murray River, near the present city of Adelaide, and in the environs of Port Phillip, where now stand Melbourne and its princely suburbs. The numbers of sheep and cattle at various dates were as follows:—

	1813.	1842.	1861.	1894.
Sheep . . .	53,000	6,810,000	23,740,000	121,200,000
Cattle . . .	25,000	1,010,000	4,040,000	18,810,000

The wool-clip rose from 6000 tons in 1842 to 300,000 in 1893, New South Wales producing at present one-half of the total. Sheep-farming in New South Wales may be said to be in the hands of two classes, the large and the small proprietors, viz.:—

Class.	Owners.	Sheep.	Average.
Large . . .	1,840	46,700,000	25,400
Small . . .	12,060	11,400,000	950
Total . . .	18,890	58,100,000	4,200

Australian sheep-farms actually cover an area of 803 million acres, of which 85 per cent. (686 million acres) are held by squatter's lease from the Government. These squatters pay 1 penny per acre rent yearly, on leases for fifty years, with right to purchase at any time. A squatter's run in Queensland averages 76,000, in South Australia 97,000, acres. It is considered that the present area under sheep-runs could carry,

at 300 per square mile, about 400 million sheep, or, allowing for cows and horses, about 266 millions, which is more than double the present number. No less than 60 per cent. of Australia is still unoccupied, the whole tenure of land in the seven colonies being shown as follows:—

	Millions of Acres.			
	Freehold.	On Lease.	Unoccupied.	Total.
New South Wales	47	124	28	199
Queensland	14	281	133	428
South Australia	9	161	408	578
West Australia	8	93	577	678
Victoria	24	15	17	56
New Zealand	21	15	31	67
Tasmania	5	1	11	17
Total	128	690	1,205	2,023

The land system has so far been unfortunate: more than 80 per cent. of the occupied area is let to 19,000 squatter capitalists at a penny an acre, and as regards lands held in fee, more than three-fourths are in estates exceeding a thousand acres. Some of the colonies, indeed, offer farm-lots to settlers at prices ranging from 7 to 20 shillings per acre, payable in instalments that stretch over five or ten years, but the lands offered are perhaps unfavourably situated, as working-men prefer to rent land from private owners: thus tenant farms in South Australia cover 10,700,000, and in New Zealand 7,100,000, acres. The value of live-stock, according to Coghlan, in 1892 amounted to 120 millions sterling, and the product of pastoral industry to 48½ millions. The total of farming products summed up almost 70 millions sterling, viz.:—

	Crops, £.	Pastoral, £.	Total, £.	£ per Inhab.
New South Wales	3,960,000	16,800,000	20,760,000	17·0
Victoria	6,670,000	9,300,000	15,970,000	13·5
New Zealand	4,840,000	9,280,000	14,120,000	21·0
Queensland	1,410,000	8,270,000	9,680,000	22·4
South Australia	3,330,000	3,090,000	6,420,000	18·5
Tasmania	1,030,000	1,060,000	2,090,000	13·5
West Australia	280,000	620,000	900,000	13·8
Total	21,520,000	48,420,000	69,940,000	17·3

The value of farming products averaged £17 per inhabitant, against £11 in Canada and £12 in the United States. The product per hand engaged is much greater than in any other part of the world, namely £160, as compared with £75 in the United States, £50 in Canada, and £91 in the United Kingdom: there is, in fact, no form of rural industry that gives so large a return per hand as the pastoral.

FORESTRY AND FISHERIES

These industries would appear of trifling importance if we considered only the number of persons employed according to the census of 1891, which did not exceed 14,400. But it must be observed that here, as in Canada, the farmers and others turn the forests to much advantage for domestic purposes, such as fences and firewood. The following table shows the forest area in five of the colonies, and the estimated product, according to Coghlan, of forestry and fisheries in 1893:—

	Forest, Acres.	Product, £.
New South Wales	19,200,000	1,500,000
Victoria	4,500,000	1,250,000
New Zealand	18,500,000	1,180,000
Queensland	130,000,000	760,000
South Australia . . . . .	...	280,000
Tasmania	7,200,000	340,000
West Australia . . . . .	...	290,000
Total . . . . .	...	5,550,000

New Zealand and Western Australia export £600,000 worth of forest products yearly, including £400,000 worth of Kauri gum from the first-named colony. On the other hand, New South Wales, Victoria, and South Australia import timber for building to the value of £500,000 yearly. Deducting from the above amount the value of the fishing industry, probably £500,000, we find the forest product, say 5 millions sterling, equivalent to no more than 6 pence per acre, as compared with 5 shillings in the United States.

MANUFACTURES

According to the census of 1891 there were 417,000 males and 70,000 females engaged in manufactures in the seven colonies. As regards the three great colonies we find there were 126,000 factory operatives and 254,000 artisans, the official returns of the factories showing thus:—

	Operatives.	Output, £.	£ per Hand.
New South Wales . . .	46,000	16,600,000	360
Victoria . . .	54,000	22,400,000	415
New Zealand . . .	26,000	8,800,000	340
<hr/>			
Total . . .	126,000	47,800,000	880

There are no factory returns for the other four colonies. If we allow £100 per head as the product of the rest of the hands engaged in manufactures, the total value of goods produced yearly between factories and artisans will be as follows:—

	Hands.	Output, £.	£ per Hand.
New South Wales . . .	140,000	26,000,000	186
Victoria . . .	168,000	34,000,000	202
New Zealand . . .	72,000	13,300,000	184
Queensland . . .	47,000	4,700,000	100
South Australia . . .	38,000	3,800,000	100
Tasmania . . .	16,000	1,600,000	100
West Australia . . .	6,000	600,000	100
<hr/>			
Total . . .	487,000	84,000,000	178

The above gives an average of £173 per hand, against £265 in Canada and £415 in the United States.

MINING

Gold was first discovered on February 16th, 1823, by Surveyor M'Brien, at a spot on the Fish River, 15 miles east of Bathurst, but the authorities deemed it advisable not to let the fact be known to the public. In 1839 it was found in the Vale of Clydd by Count Strelczi, who was requested by Governor Gipps to keep the matter secret, lest it should lead to disagreeable consequences. A third discovery took place in 1841 by the geologist, Rev. W. Clarke, in Macquarie

Valley. Finally, in 1851, a wandering English lawyer named Hammond Hargraves, who had been a gold-digger in California, found a rich vein near Bathurst, which quickly attracted thousands of adventurers. A few weeks later valuable deposits were found at Ballarat and elsewhere, and in July (1851) a nugget weighing 1270 ounces, worth £5000, was taken out of the Turon diggings. In ten years, from the date of Hargraves' discovery, the Australian gold-fields yielded 120 millions sterling, the Ballarat fields producing the biggest nuggets, such as the Welcome in 1858, and the Stranger in 1869, worth respectively £8400 and £9500 sterling. The value of gold produced in forty-four years to end of 1894 was as follows:—

Period.	£	Period.	£
1851-60 . . .	118,000,000	Victoria . . .	238,400,000
1861-70 . . .	95,000,000	New Zealand . . .	50,200,000
1871-80 . . .	81,000,000	N. S. Wales . . .	41,000,000
1881-90 . . .	48,300,000	Queensland . . .	35,000,000
1891-94 . . .	28,700,000	W. Australia, &c. . .	6,400,000
44 years . . .	371,000,000	Total . . .	371,000,000

However attractive gold-mining must always prove to a large number of the human race, it has been on the whole a business that hardly pays working expenses. Many of the mines are over 2000 feet deep, and when a ton of quartz is brought to the surface it yields only half an ounce of gold. If we take the average yield per ton of the last five years, in the several colonies, as that of the whole period, the quantity of quartz raised and the product per ton will be as follows:—

	Tons, Quartz.	Gold, Oz.	Oz. per Ton.
Victoria . . .	147,000,000	70,700,000	0·48
New Zealand . . .	13,300,000	14,800,000	1·10
Other colonies . . .	21,800,000	22,900,000	1·05
Total . . .	182,100,000	108,200,000	

The total quantity of gold produced was only 3000 tons, and would fit in a room 30 feet square by 12 feet in height: the quartz would suffice to build thirty pyramids such as that of Cheops. It appears that 60,000 tons of quartz gave a ton of

gold, being somewhat richer than Californian quartz, which took 70,000 to a ton of gold. The year of greatest production was 1856, when it reached a value of £13,200,000, declining to £5,400,000 in 1886 ; but there has been a recovery since then, the average for the last five years having been £7,200,000 or 52 tons of pure metal. The ordinary number of miners is 60,000, and the product per miner varies exceedingly, the result, for example, in 1892 showing as follows :—

	Miners.	Product, £.	£ per Man.
Victoria	23,500	2,620,000	111
Queensland	8,700	2,150,000	247
New Zealand	12,200	950,000	78
New South Wales, &c. .	15,600	1,110,000	71
Total	60,000	6,830,000	114

The above gives an average product of £114 per man, or less than two-thirds of the average product per hand on farms.

Silver.—The first discovery of this metal was in Victoria, in 1863, mixed with gold. It was found in New Zealand in 1869, and the following year in New South Wales. The total value produced in thirty-one years, to end of 1893, was £17,100,000, of which 95 per cent. was from New South Wales. The product in 1893 reached 20 million ounces of bar silver, valued at 3 millions sterling : the number of mines was less than 5000, the product exceeding £600 per man. Broken Hill, near the Darling River, which has proved one of the richest silver mines in the world, was discovered in 1883 by a shepherd of Mount Gipps, named Charles Rasp : in eight years down to December 1893 it gave a gross product of £10,900,000, from which the dividends to shareholders amounted to 7 millions sterling.

Copper was found at Kapunda, South Australia, in 1842, and at Cobar, New South Wales, in 1876. South Australia in the last fifty years has produced 250,000 tons of bar copper, valued at 20 millions sterling ; New South Wales in seventeen years 52,000 tons, worth 4 millions ; and Queensland 30,000 tons, valued at 2 millions.

Tin was discovered by Bass in 1798 on the north coast of Tasmania, and by Rev. Mr. Clarke in 1853 in New South Wales, but it was not until 1872 that the first mines were opened, simultaneously, in New South Wales, Queensland, and Tasmania. In the last twenty-one years the value of tin raised was 16 millions sterling, the production showing in aliquot parts as follows : New South Wales 36, Tasmania 35, Queensland 25, and Victoria 4, per cent. of that sum.

Coal was first found in 1797 near Mount Keira, New South Wales, by a derelict sailor named Clark, and again in 1846 at Irwin River, Western Australia. Mining began in New South Wales in 1847, when 40,000 tons were raised, the production rapidly rising to 4 million tons in 1891, and declining since then. Coal-fields have likewise been opened in Queensland and New Zealand, the total Australian output in 1892 reaching 4,800,000 tons, which gives Australia the eighth place among the coal-producing countries of the world. The aggregate product since 1847 has been 69 million tons, valued at 33 millions sterling. New South Wales gave 84, New Zealand 12, and Queensland 4, per cent. of the total. Coal-mining seems a better industry than gold-mining : the colliers of New South Wales in ten years ending 1893 averaged yearly 358 tons, value £155 per man, against £114 in gold-mining. The supply of coal is now greater than home consumption, sea-going steamers in 1893 taking no less than 750,000 tons.

The total mining product in fifty years to end of 1892 was 448 millions sterling, made up thus :—

	Millions £.		Millions £.
Gold	371	Victoria	239
Coal	37	New South Wales	102
Copper	27	New Zealand	56
Silver	20	Queensland	43
Tin	17	South Australia	23
Sundries	3	Tasmania, &c.	12
Total	475	Total	475

The value of minerals for the year 1894 was £14,000,000, of which gold stood for £8,300,000 and silver for £2,600,000.

COMMERCE

In the trade returns each of the seven colonies treats its neighbours as foreign countries, and thus the aggregate of imports and exports rises to a fictitious figure. If the colonies were confederated like Canada or the United States, this local trade would not appear as international. The following table shows the nominal trade returns:—

	1861.	1878.	1893.
Imports . . .	26,500,000	41,400,000	58,300,000
Exports . . .	24,500,000	39,100,000	65,800,000
Total . . .	<u>51,000,000</u>	<u>80,500,000</u>	<u>119,100,000</u>

Viewing Australia as one country, and eliminating inter-colonial traffic, the transmarine trade shows as follows:—

	1861.	1881.	1893.
Imports . . .	18,500,000	38,300,000	27,800,000
Exports . . .	16,600,000	31,200,000	40,000,000
Total . . .	<u>35,100,000</u>	<u>64,500,000</u>	<u>67,800,000</u>

The following table shows the total trade for twenty years:—

Period.	Foreign, Millions £.			Intercolonial, Millions £.		
	Imports.	Exports.	Total	Imports.	Exports.	Total.
1874-83 . . .	320	291	611	180	153	333
1884-93 . . .	376	349	725	256	243	499
20 years . . .	<u>696</u>	<u>640</u>	<u>1,336</u>	<u>436</u>	<u>396</u>	<u>832</u>

Imports exceeded exports down to 1891, but since the great banking crisis of 1893 there has been a large surplus of exports, that is to say, the balance of trade has been greatly in favour of Australia. This is the surest sign, or the inevitable consequence, of a great calamity or public distress: the same thing occurred, for example, as regards the trade of France after the Franco-German War, and continued so until 1876. The transmarine trade of the colonies has increased

only 21 per cent. in twenty years, while the population has more than doubled: the aggregate of imports and exports in each colony (excluding intercolonial trade) shows as follows:—

Year.	Millions £ Sterling.					
	New South Wales.	Victoria.	New Zealand.	South Australia.	Queensland, &c.	Total.
1878.	14·5	24·4	8·2	5·6	3·2	55·9
1893.	22·4	17·1	13·2	7·6	7·5	67·8

Victoria having adopted Protection her trade has declined 30 per cent., while the Free Trade policy of New South Wales has resulted in an increase of 55 per cent. The total foreign or transmarine trade of the last twenty years amounts, as we have seen, to 1336 millions sterling, and the shares corresponding to the several colonies show thus:—

	Millions £ Sterling.			Ratio.
	Imports.	Exports.	Total.	
Victoria . . .	238	201	434	32·5
New South Wales . . .	220	191	411	30·8
New Zealand . . .	112	116	228	17·1
South Australia . . .	67	76	143	10·7
Queensland . . .	46	40	86	6·4
Tasmania . . .	11	8	19	1·4
West Australia . . .	7	8	15	1·1
Total . . .	696	640	1,336	100·0

There has been relatively a decline in recent years of the trade relations with Great Britain: in the quinquennium of 1874–78 trade with the Mother Country was 79 per cent., in that of 1889–93 only 76 per cent. of the total. The average yearly in the two periods showed as follows:—

With	1874–78.	1889–93.	Increase. Per Cent.
Great Britain . . .	£45,400,000	£57,600,000	27
Other countries . . .	12,000,000	18,200,000	52
Total . . .	57,400,000	75,800,000	32

Coasting or intercolonial trade has grown three times as

fast as foreign trade in the same interval, as appears in the annual averages, viz. :—

	1874-78, £.	1889-93, £.	Increase per Cent.
Foreign . . .	57,400,000	75,800,000	32
Intercolonial . . .	28,800,000	54,600,000	90
Total . . .	86,200,000	130,400,000	52

The shares which corresponded to the principal colonies in the trade of the last period of five years showed as follows :—

	Millions £ Sterling.					
	New South Wales.	Victoria.	South Australia.	New Zealand.	Queensland, &c.	Total.
Foreign . . .	24·6	22·0	8·0	18·0	8·2	75·8
Colonial . . .	20·6	11·8	8·6	3·0	10·6	54·6
Total . . .	45·2	33·8	16·6	18·0	18·8	130·4

The average of foreign trade was £20 per inhabitant, against £19 in the United Kingdom.

Shipping.—The merchant shipping of the seven colonies sums up 370,000 tons register, with a carrying-power of 920,000 tons, or one-third of the merchant-navy of France. Registered tonnage and carrying-power are shown as follows :—

	New South Wales.	Victoria.	New Zealand.	South Australia, &c.	Total.
Tons register .	110,000	95,000	75,000	90,000	370,000
Carrying-power	275,000	245,000	195,000	205,000	920,000

It is remarkable that while Australian trade has only doubled in thirty years port-entries have multiplied six-fold, the tonnage of entries showing as follows :—

Year.	Tons.				Total.
	Melbourne.	Sydney.	Other Ports.		
1861 . . .	550,000	370,000	530,000	1,450,000	
1892 . . .	2,080,000	1,750,000	4,800,000	8,630,000	

Classifying the entries in 1892 it is found that transmarine vessels constituted 36, colonial 64, per cent. of the total.

Internal Trade.—This may be summed up as follows:—

& Sterling (000's omitted).

	Rural.	Manu-fac-tures.	Mining.	Forestry, &c.	Imports.	Total.
N. S. Wales .	20,800	26,000	4,900	1,500	8,200	61,400
Victoria .	16,000	34,000	2,800	1,300	7,800	61,900
New Zealand .	14,100	13,300	1,700	1,100	4,900	35,100
Queensland .	9,700	4,700	2,700	800	3,600	21,500
South Australia .	6,400	8,800	400	300	2,600	13,200
Tasmania .	2,100	1,600	700	300	700	5,400
W. Australia .	900	600	800	300	500	3,100
Total .	70,000	84,000	14,000	5,600	28,000	201,600

Railways.—The first was only 3 miles long, from Melbourne to Hobson's Bay, opened in 1854; the second was in the following year, from Sydney to Paramatta, 14 miles. Very little was done in the way of construction before 1873, but in the last twenty years more than 10,000 miles have been laid down. In 1883 the New South Wales and Victorian lines met at the Murray River; in 1886 Adelaide and Melbourne were connected; and in 1888 Sydney and Brisbane, thus completing a continuous line of 1500 miles between the capitals of South Australia and Queensland. It is proposed to connect Adelaide with Perth, in Western Australia, and also to carry a line across the continent, from Adelaide due north to Port Darwin. It is unfortunate that there are three gauges in use: that of 63 inches in Victoria, of 56½ inches in New South Wales, and of 42 inches in all the other colonies: as if to increase confusion South Australia has the first and third gauges, and New South Wales all three. The length of railways in 1893 was 3540 wide, 2360 medium, and 6860 miles narrow gauge, in all 12,760 miles, all of which, except 800 miles, were State property. The sum expended on Government lines was 122 millions sterling, and the loans contracted for the purpose involve an annual burthen of £4,740,000, which exceeds the net profits of the railways by £1,200,000: this deficit is met by taxation, and is equal to an impost of 6 shillings per inhabitant, a trifle compared with the benefit

caused by railways to the colonies. In 1893, according to Coghlan, the ordinary charge for conveying goods 100 miles was 13 shillings by rail and 100 shillings by team: the goods traffic by rail in the preceding year was equivalent to 9 million tons carried 100 miles, the freight on which at the wagoner's charge would have been 45 millions sterling, but as the State railways charged only £5,700,000, the public was gainer to the amount of £39,300,000, equal to a yearly dividend of 32 per cent. on the sum spent in constructing the lines, or to a bonus of £10 per head on the whole population of the seven colonies. Although Australia is mostly flat, some of the lines have had to surmount great engineering difficulties: that over the Blue Mountains attains a height of 3660 feet at Clarence, and the Sydney-Brisbane line 4470 feet at Ben Lomond. The highest point in New Zealand is 1250 feet over sea-level. The whole cost of constructing 13,620 miles down to 1894, between Government and Companies' lines, has been 139 millions sterling, or £10,200 per mile. Traffic is light, the averages per mile being:—

	Receipts, £.	Expenses, £.	Profit, £.	Int. on Cap.
Australian . .	798	497	301	2·95
Canadian . .	713	508	210	1·75

Banking.—The condition of Australian banks was gravely affected by the crisis which burst like a tornado on April 5th, 1893. Of 24 banks that existed in March 1893, only twelve were standing in May of the same year. Those which had fallen owed the public 90 millions sterling, and were allowed to reconstruct by means of calling up fresh capital and giving bonds to depositors: in December 1894 one-third of the deposits had been repaid. The paid-up capital of banks is now £20,300,000, as compared with £15,700,000 before the crisis. Bullion reserve amounts to £23,800,000, or £6 per inhabitant, whereas the total of gold in Great Britain, between banks and the public, is not quite £3 per inhabitant. Banking power is about 150 millions sterling.

Deposits have multiplied eight-fold since 1861, showing as follows:—

Year.	Millions £ Sterling.						Total.
	Victoria.	New South Wales.	New Zealand.	Queensland.	South Australia, &c.		
1861 .	7·6	5·6	0·9	0·3	1·7		16·1
1894 .	43·7	38·4	18·4	12·7	15·0		128·2

At present the ratio of deposits to population is £37 per head in Victoria, and £31 in New South Wales.

EARNINGS AND WEALTH

The earnings of the seven colonies are shown approximately as follows:—

	£ Sterling (000's omitted).						Total.
	Manufactures			Trade and Transport.	House-rent.	Professions, &c.	
	Farming.	Mining.					
New S. Wales .	12,400	18,000	12,700	6,800	17,300	17,300	67,200
Victoria .	9,600	20,400	12,900	7,300	15,600	15,600	65,800
New Zealand .	8,500	8,200	7,100	2,300	8,000	8,000	34,100
Queensland .	5,800	5,100	4,400	1,900	5,900	5,900	23,100
South Australia .	3,900	2,300	2,700	1,300	3,800	3,800	14,000
Tasmania .	1,300	1,500	1,100	1,000	2,000	2,000	6,900
West Australia .	500	1,100	600	400	1,300	1,300	8,900
Total . .	42,000	56,600	41,500	21,000	53,900	53,900	215,000

The census report of 1891 estimates the earnings of the colony of New South Wales at £66,400,000, or 1 per cent. less than the figure in the above table: no official estimate has been made with regard to the other colonies. The above total for the seven colonies, showing 215 millions sterling, gives an average of £51 per inhabitant, against £36 in Canada and £44 in the United States. The ratios, of course, vary considerably in the seven colonies, that of Victoria, for example, being 40 per cent. higher than that of S. Australia.

In the preceding table house-rent is set down at £21,000,000, which is equal to £5 per inhabitant, as compared with £4 in Great Britain. The census of 1890 showed an average rent of £5, 14s. in the colony of New South Wales, and the Government statistician, Mr. Coghlan, adopted for Australasia an average of £5, 6s. Since then, however, property has declined so notably that the house-rent of the seven colonies can hardly exceed £14,000,000, or two-thirds of what it was in 1892. If this be admitted the earnings of the people will be reduced to 208 millions sterling, equal to £49 per inhabitant, that is £5 more than in the United States.

Wealth.—In twelve years ending 1892 the number of deaths which occurred in the colonies of New South Wales, Victoria, New Zealand, South Australia, and Tasmania was 500,300, and the value of property which passed through the Probate Court £152,200,000, that is an average of £304 each. Applying this ratio to the population of the seven colonies in 1894, namely 4,150,000, we find the wealth of Australia to be approximately 1262 millions £ sterling, without counting State railways and other public property (valued at 225 millions). It would appear, therefore, that in 1892 (the year before the collapse of so many banks) the wealth of the seven colonies was about 1450 millions sterling. Coghlan's estimate in 1890 did not include railways and other public property, the inclusion of which would have made the account stand thus:—

	Millions £.
Real estate	821
Cattle	120
Sundries	229
Public works	200
 Total	 1,370

We must, nevertheless, observe that a "boom" prevailed in 1890, by which houses and lands appeared to be worth double their real value: hence real estate must be taken at half Coghlan's estimate, or 410 millions sterling. Making this

deduction the wealth of the seven colonies in 1895 sums up 1076 millions sterling, viz.:—

	Millions £ Sterling.					
	Cattle.	Land.	Houses.	Sundries.	P. Works.	Total.
N. S. Wales .	34	85	68	112	71	370
Victoria .	21	49	53	84	76	283
N. Zealand .	20	43	25	49	29	166
Queensland .	34	18	8	32	22	114
S. Australia .	7	28	12	29	19	95
Tasmania .	2	9	6	10	5	32
W. Australia .	2	4	2	5	3	16
Total .	120	236	174	321	225	1,076

The average of earnings and wealth per inhabitant in the several colonies is as follows :—

	<i>£ per Inhabitant.</i>		<i>£ per Inhabitant.</i>		
	Earnings.	Wealth.	Earnings.	Wealth.	
N. S. Wales .	54	296	S. Australia .	40	271
Victoria .	56	236	Tasmania .	44	206
New Zealand .	50	287	W. Australia .	47	240
Queensland .	52	253	Gen. average .	51	256

The Australian items of wealth, on the above basis, compare with those of Canada as follows :—

	<i>Millions £.</i>		<i>£ per Inhabitant.</i>	
	Australia.	Canada.	Australia.	Canada.
Land . . .	236	230	56	45
Cattle, &c. . .	156	75	37	15
Houses . . .	174	112	41	22
Public Works, &c. .	510	585	122	114
Total . . .	1,076	1,002	256	196

Land.—There are 132 million acres freehold, worth 236 millions, an average of 36 shillings per acre, as compared with 76 shillings in Canada and 154 in the United States. As regards leased land, which is not included in the foregoing estimates of wealth, there are 686 million acres let to squatters at a penny an acre yearly, the capital value of which is said

to be seventy times the said rent, or 6 shillings an acre, and hence these lands represent 206 millions sterling, which is almost identical with the sum total of public debt. The foregoing statement of wealth, namely, 1076 millions, may be considered the net wealth of Australia. Besides the freehold and leased lands there are vast plains unoccupied and unproductive, which cover 1205 million acres, or 60 per cent. of the total area; for all practical purposes they may be considered worthless, although they may some day prove of value.

Houses.—The estimated rental in 1892, according to Coghlan, was £20,900,000, equal to 106 shillings per inhabitant, taking all seven colonies in the aggregate: this was equivalent to a capital value of 348 millions sterling, and if we deduct one-half, on account of the inflation before the crisis, as already explained, the real value of house-property will now be 174 millions. The rental as given by Coghlan, and the present value on the reduced estimate, are shown thus:—

	Rental, £.	Value, £.	Population.	£ per Inhab.
Sydney .	6,070,000	50,600,000	412,000	124
Melbourne .	6,950,000	58,000,000	475,000	122
Other towns	7,850,000	65,400,000	1,323,000	50
Total .	20,870,000	174,000,000	2,210,000	79

The ratios of house-property per inhabitant in Sydney and Melbourne (even at the above reduced valuation) are nearly as high as in Paris or London. The magnificence of those cities strikes the visitor with amazement. The Parliament House of Melbourne covers 2 acres, and Menzies Hotel cost £150,000, while the adjoining pile of building cost £490,000. Sydney is equally superb in public and private edifices, having 1520 miles of streets and boulevards, with 82,000 houses. The house-property of the Australian colonies, at the reduced estimate, constitutes 17 per cent. of total wealth, as compared with 21 per cent. in France and the same in the United Kingdom.

FINANCES

Revenue has trebled in thirty years, viz. :—

	Amount £.		Shillings per Inhab.	
	1865.	1894.	1865.	1894.
Customs . . .	3,200,000	7,700,000	40	88
Lands . . .	2,600,000	4,000,000	82	20
Railways . . .	900,000	9,400,000	11	46
Taxes, &c. . .	2,800,000	8,100,000	30	89
Total . . .	8,000,000	29,200,000	113	143

Thirty years ago almost 30 per cent. of the revenue was derived from lands ; at present this source gives less than 14 per cent. of the total, yet the finances of the colonies have suffered no derangement or inconvenience. The land-sales of ten years ending December 1893 summed up nearly 20 million acres, and realised 22 millions sterling, an average of 22 shillings per acre. The total of sales from the commencement down to December 1893 was :—

	N. S. Wales.	Victoria.	N. Zealand.	Queensland, &c.	Total.
Acres . . .	24,100,000	16,900,000	20,700,000	29,800,000	91,500,000
Price, £. . .	36,700,000	25,600,000	13,500,000	21,200,000	97,000,000

The lands leased to squatters, as already stated, cover 686 million acres, and are estimated at 206 millions £, or 6 shillings per acre, whereas the above realised 21 shillings. Meantime the leased lands bring in a rental of £1,950,000, being an average of £2 per square mile yearly. The revenues of the colonies in 1894 were as follows :—

	£ Sterling (000's omitted).				
	Customs.	Lands.	Railways.	Sundries.	Total.
N. S. Wales . . .	2,130	2,210	3,250	2,950	10,540
Victoria . . .	1,720	500	2,710	1,790	6,720
N. Zealand . . .	1,660	310	1,180	1,500	4,650
Queensland . . .	1,080	590	930	740	3,340
S. Australia . . .	500	230	1,010	790	2,530
Tasmania . . .	290	60	150	200	700
W. Australia . . .	330	100	140	110	680
Total . . .	7,710	4,000	9,370	8,080	29,160

Debt.—The rapid increase of debt in the last twenty years has given rise to frequent and unfounded alarms as to the solvency of these colonies: it has more than quadrupled since 1874, viz.:

	Amount, £.		£. per Inhab.	
	1874.	1894.	1874.	1894.
New South Wales .	10,500,000	58,100,000	20	47
Victoria . .	12,500,000	47,300,000	16	40
New Zealand .	18,400,000	39,800,000	40	59
Queensland .	5,200,000	32,100,000	35	74
South Australia .	8,000,000	22,600,000	14	65
Tasmania . .	1,500,000	7,600,000	14	50
West Australia .	100,000	2,900,000	4	44
Total. . .	46,200,000	210,400,000	21	52

No other country in the world has ever had a debt of £52 per inhabitant, the highest on record having been that of the United Kingdom after Waterloo, £48 per head: the average of European debts at present is only £15 per head. But, in the first place, it is right to note that 60 per cent. of the Australian debt is represented by State railways, which give a net profit of 3 per cent. on their cost. Deducting the capital expended on these railways, the Australian debt is reduced to 84 millions sterling, or £20 per inhabitant, a lower ratio than we have in the United Kingdom between national and local debt. Secondly, the public lands now leased to squatters are certainly worth over 200 millions, and may be considered to cover the whole debt of Australia. Thirdly, the wealth of Australia averages £256 per inhabitant, so that even deducting the gross debt, £52 per head, there is still a balance of £204, which ratio is unequalled in any other country of the world. Fourthly, the annual burthen of debt, after deducting the net product of railways, is only £5,400,000 per annum, or 27 per cent. of the revenue (excluding railway receipts), whereas the service of debt in Great Britain takes 30, in Canada 33, and in France 39 per cent. of the total revenue.

Incidence.—The incidence of taxation and debt is light. The amount raised yearly by taxation is only £10,700,000, which is only 5 per cent. of the earnings of the people, the

incidence in the United Kingdom being over 8 per cent. The net debt, as shown above, is only 84 millions sterling, or 9 per cent. of the net wealth of the colonies, as compared with 8½ per cent. in the United Kingdom. It is true, meantime, that the incidence of taxation and debt varies exceedingly in the seven colonies, as compared with earnings and wealth. If we put aside all State railways, and count them neither among assets nor liabilities, the net wealth and debt of the Colonies stand thus:—

	Millions £.			Millions £.			Tax. Ratio.
	Wealth.	Debt.	Debt Ratio.	Earnings.	Taxation.		
New South Wales.	331	19	5·7	67·2	2·83		4·2
Victoria	245	10	4·1	65·8	2·60		4·0
New Zealand	150	25	16·6	34·1	2·39		7·0
Queensland	97	15	15·5	23·1	1·35		5·7
South Australia	79	9	11·4	14·0	0·76		5·5
Tasmania	23	4	14·3	6·9	0·41		6·0
West Australia	18	2	15·3	3·9	0·36		9·2
Total . .	943	84	8·9	215·0	10·70		5·0

The incidence of debt, it will be seen, is much greater in New Zealand and Queensland than in the other colonies. The incidence of taxation is less uneven, and may be said to range from 5 to 8 per cent., Western Australia being exceptional. There are few countries in the world where the incidence of taxation is so low as in the Australian colonies, and if the occasion called for it, the people could readily pay taxes to the amount of 20 millions sterling, or double what they pay at present.

In the foregoing statement of debt no account is taken of municipal and other local debts, amounting to 30 millions sterling. If these were included, the net debt of Australia would be over 10 per cent. of wealth.

XXI

SOUTH AFRICA

CAPE COLONY, as it was originally called, comprises the territory south of Orange River, having the Indian Ocean for its eastern, the Atlantic for its western, boundary, and covering an area of 241,000 square miles, that is larger than the German Empire. This includes Natal, which was detached in 1856, but may be considered, for the sake of continuity, as if still forming a part of Cape Colony. There is an abundance of wood, water, and prairie, and British South Africa enjoys a great advantage over Australia and Canada in the fact that no part of its territory is more than 400 miles from the sea-board. The first batch of British settlers, mostly Scotch, arrived at Cape Town in 1820, and many others followed from time to time, but it was the discovery of the Kimberley diamond-fields in 1867 that first gave importance to this part of the world. Population has quintupled since 1850, viz. :—

Year.	Whites.	Blacks.	Total.
1850	95,000	310,000	405,000
1893	1,000,000	1,230,000	2,230,000

There are four towns, Cape Town, Kimberley, Port Elizabeth, and Durban, with an aggregate of 160,000 souls, or 7 per cent. of the total, most of the population being engaged in farming.

The census of 1850 showed a surplus of females, as 116 to 100 males, but that of 1891 gave the sexes as equal.

The working-power is 1900 millions of foot-tons daily, one-fifth being supplied by steam, which amounts to 100,000 horse-power, and of this nearly nine-tenths consist of railway locomotives.

AGRICULTURE

Pastoral interests predominate, South Africa being specially suited thereto. In the eighteenth century the Dutch Boers had flocks and herds that covered an area of 20 million acres, their first effort to improve the breed of sheep being the introduction of some Merinos, part of a flock presented to the Stadholder by the King of Spain. Cape wool made its first appearance in London in 1810, a small invoice of 10 tons, which was so well received that sheep-farming progressed rapidly : the wool export in 1833 rose to 500 tons, and now it exceeds 40,000, including 11,000 from Natal, the first shipment from the latter colony having been in 1861. The breed of sheep has been greatly improved in recent years, the average weight of fleece being a little over 5 lbs., as compared with $3\frac{1}{2}$ in 1865. Live-stock of all descriptions has increased very notably in the last fifty years, though by no means on a par with Australia or Argentina : the figures show as follows :—

Year.	Cattle.	Sheep.	Goats.	Horses.
1840 . . .	807,000	2,340,000	390,000	57,000
1893 . . .	2,690,000	17,750,000	5,960,000	430,000

Angora goats were introduced from Smyrna in 1860 and crossed with native goats, and although the industry made little progress during twenty years it has advanced so rapidly since 1880 that it promises to rival sheep-farming in importance : the export of hair in 1894 reached 4500 tons, valued at £450,000. Ostrich-farming is another industry to which much attention has been paid, although the price of feathers is now hardly one-fifth of what it was twenty years ago : the progress in the interval is shown thus :—

Year.	Ostriches.	Feathers, lbs.	Value, £.
1874 . . .	22,000	37,000	210,000
1894 . . .	230,000	350,000	480,000

In 1894 the number of cattle and sheep farms was 16,200, covering an area of 84 million acres, that is an average of 5200 acres, the average stock of each farm being 27 horses,

170 cows, 370 goats, and 1100 sheep. Only 5400 of the farms were held in fee, and these comprised 24 million acres, the rest being squatters' runs, to an extent of 60 million acres.

Tillage has always been a secondary occupation, and may be said to date from the settlements of Scotch ploughmen made by Lord Liverpool, in 1820, at Uitenhage, Albany, and Somerset, which were thus described by an English traveller in 1843 : "These settlements cost the British Government £50,000, and what is the result after twenty-three years ? We behold the desert converted into a garden ; towns, villages, and hamlets where before was a cheerless solitude ; the busy hum of industry on all sides ; just laws, education, and religion spreading their benefic influence around, while the shipment of products exceeds a value of £100,000. There is no brighter example in the whole world of a prosperous group of settlers." The total area under crops in 1893, between Cape Colony and Natal was 1,540,000 acres, of which 90 per cent. was under grain : the supply of grain is, of course, far short of requirements, but the deficit is not so great as it was ten years ago. Thus in 1883 the consumption was 220,000 tons, of which 74,000 were imported ; and in 1893 it was 310,000 tons, of which 60,000 were imported : in other words the inhabitants ten years ago lived on imported grain during four months in the year, whereas the importation in 1893 was only equal to a supply for seventy days. This shows that in spite of diamond-fields, gold-fields, and other attractions tillage is making steady progress. At one time, some forty years ago, it was expected that wine-growing would prove very successful, as the climate and soil were most favourable : even in the eighteenth century the Constantia vineyards, near Cape Town, were famous for a wine equal to Malaga. The hope has not been realised, the export having declined to a small fraction of what it was then, viz. :—

	1858.	1894.
Gallons	950,000	85,000
Value, £	140,000	19,000

This decline is the more to be regretted as Algeria, where the first vines were planted in 1856, now produces 80 million gallons yearly. Cape vineyards at present cover 30,000 acres, and produce 4½ million gallons, an increase of 1 million over 1875. The value of farming products is approximately as follows :—

	Cape, £.	Natal, £.	Total, £.
Wool . . .	1,600,000	500,000	2,100,000
Grain . . .	1,000,000	400,000	1,400,000
Sundries . . .	3,400,000	1,100,000	4,500,000
Total . . .	6,000,000	2,000,000	8,000,000

The agricultural capital is approximately 65 millions sterling, of which 51 pertain to Cape Colony and 14 to Natal, and the value of products is as 12½ per cent. on capital, against 18 in Australia, and 19 per cent. in Canada.

MANUFACTURES

In 1834 there were in the colony 170 mills and factories, the output of which would hardly reach £200,000. In 1891 there were 2230 factories, with 33,000 hands and valued at £1,560,000. The output of flour-mills, breweries, tanneries, and other factories in the same year was estimated at £4,900,000, equal to £150 per hand employed. Manufactured goods are imported to the yearly value of 6 millions, which shows the consumption to reach 11 millions, or £5 per inhabitant.

MINING

Coal was the first mineral discovered in the colony, in some borings at Wynberg, near Cape Town, in 1845. Thirty years later an English Company obtained a concession from the Government of Natal to work coal-fields near Durban, which now produce 200,000 tons yearly, or nearly half the quantity consumed in the two colonies, the rest being imported from England.

Copper was found in 1850, and the value exported since 1858 reaches 9½ millions sterling: the year of greatest production was 1888, viz., 40,000 tons ore, value £900,000, declining in 1894 to 27,000 tons, value £300,000.

Diamonds were found in 1867 at Kimberley on Vaal River, 400 miles north of Port Elizabeth, but no rush of diggers occurred till 1869, when a diamond of 83 carats, worth £100, was found, and since then the product of twenty-five years has been as follows:—

Period.		Value £.	Carats.	£ Yearly.
1869-83	:	28,900,000	...	2,050,000
1884-94	:	40,500,000	32,800,000	3,700,000
25 years	.	<u>69,400,000</u>	...	2,800,000

There are usually 18,000 miners, half whites, half Basutos, and the yearly product averages £220 a man. The highest price for one of these diamonds was £11,000, paid in November 1872 for the Stewart diamond, weighing 228 carats, this being the fourth diamond in the world, as regards size. The quality of these diamonds has improved in late years, the value per carat since 1890 averaging 26 shillings, as compared with 22 shillings in the years 1884-86. The yield of the diamond-fields reached its highest point in 1888, namely 3,800,000 carats, worth £4,020,000, declining to 2,500,000 carats, value £3,010,000, in 1894. The effect of these diamond-fields has been to cause all the diamonds in the world to fall one-third in value since 1875. It will probably be many years before they can be exhausted, as they extend some miles over the West Griqualand border into the Orange Free State. The total mineral product of Cape Colony and Natal is about £4,200,000 per annum.

COMMERCE

The foreign trade has nominally quintupled since 1860, viz.:—

Year.		Imports, £.	Exports, £.	Total, £.
1860	:	3,000,000	2,200,000	5,200,000
1894	:	18,800,000	14,900,000	28,700,000

The returns for 1894, however, are artificial, since they include an important transit trade with the Transvaal and Orange State Republics. Exports, for example, include gold bullion and dust to the value of £7,400,000. The real trade of Cape Colony and Natal is about 11 millions imports and 7 millions exports, together 18 millions sterling, or £8 per inhabitant.

Shipping.—The colonists own 53 sea-going vessels, with an aggregate of 5000 tons register, and 15,000 tons carrying-power. Port entries, excluding coast-trade, reach 2,400,000 tons, about 90 per cent. being British.

Internal Trade.—This amounts to about 28 millions, namely, agricultural products 8, manufactures 5, mining 4, and imports 11, millions sterling.

Railways.—The first line, 64 miles long, was opened in 1873, and the total length open in December 1893 was 2840 miles, representing a cost of £27,700,000, or £9700 per mile. The lines all belong to the State, except one of 200 miles, the State lines including 400 miles in Natal. In 1895 the main trunk line from Cape Town was prolonged across Orange Free State to Johannesburg, the chief town in the Transvaal or South African Republic, a length of 700 miles. The Natal has also been completed from Durban to Johannesburg, 480 miles. The Cape lines cost £8800, those of Natal £15,000, per mile. The State lines give 5½ in the Cape, 3½ per cent. in Natal, equal to almost 5 per cent. (4·8) over all. Traffic returns for the two colonies showed thus, per mile:—

	Cape, £.	Natal, £.	General, £.
Receipts	1,140	1,200	1,150
Expenses	670	670	670
Profit	470	530	480

The above are for State railways, no returns being published for the Company's line of 200 miles.

Banks.—Banking-power amounts to about 9 millions sterling, the deposits in banks summing up 8½ millions, that is, 6½ for Cape Colony and 2 millions for Natal.

EARNINGS AND WEALTH

The earnings of the people are approximately as follows :—

	Cape, £.	Natal, £.	Total, £.
Agricultural . . .	3,600,000	1,200,000	4,800,000
Manufacturing . . .	2,400,000	200,000	2,600,000
Mining . . .	4,000,000	200,000	4,200,000
Trade . . .	2,400,000	400,000	2,800,000
Transport . . .	2,500,000	400,000	2,900,000
House-rent . . .	1,100,000	300,000	1,400,000
Domestics . . .	700,000	200,000	900,000
Public service . . .	2,600,000	500,000	3,100,000
Professions . . .	1,900,000	400,000	2,300,000
Total . . .	21,200,000	3,800,000	25,000,000

This is an average of only £11 per head, but it must be borne in mind that 55 per cent. of the population are negroes, to whom, if we allot one-fourth of the total earnings, the balance left for the whites will be £18,700,000, or nearly £19 per head, against £37 in Canada.

Wealth.—In 1834 the colony was valued by Pebrer at £6,400,000. There was an official valuation of houses and lands in 1883 for Cape Colony (without Natal) which amounted to £37,800,000. The total wealth in 1894 was approximately as follows :—

	Millions £ Sterling.		
	Cape.	Natal.	Total.
Lands	27	8	35
Cattle, &c.	24	6	30
Railways	22	6	28
Houses	10	3	13
Merchandise	11	3	14
Sundries	24	6	30
Total	118	32	150

Lands.—About four-fifths of the area is bush, the occupied lands covering 29 million acres, representing approximately a value of 35 millions sterling, viz. :—

	Tillage.	Pasture.	Total.
Acres	1,540,000	27,500,000	29,040,000
Value, £	7,700,000	27,500,000	35,200,000

Government land may still be bought in Cape Colony at a shilling an acre, far in the interior, all the best land having been taken long since; but the State lands of Natal cannot be purchased under 10 shillings an acre, as they have the advantage of proximity to seaports, no part of this colony being over 200 miles from the seaboard. In the above estimate of lands, based on the Government valuation of 1883, are not included 60 million acres of Crown lands leased to squatters, which may represent a value of 10 millions sterling, nor 70 million acres of forest and desert, practically valueless.

Houses.—The house-property of Cape Town, Port Elizabeth, and Kimberley, in 1883 was of the assessed value of £8,600,000, and will probably now reach 10 millions sterling.

FINANCE

The collective revenue of the two colonies rose from £800,000 in 1860 to £6,300,000 in 1894, amounting in the latter year to £5,300,000 for Cape Colony and £1,000,000 for Natal. One-half of the total revenue proceeds from railways, the other from taxes and public lands. The sum raised by taxation is £2,200,000, say 9 per cent. of the earnings of the people. The product of leased lands is about a penny an acre, the same as in Australia.

Debt.—This has nearly trebled since 1880, having arisen mostly from expenditure in constructing State railways. The amount was as follows:—

Year.	Cape, £.	Natal, £.	Total, £.
1880 . . .	11,400,000	1,600,000	13,000,000
1894 . . .	27,700,000	8,100,000	35,800,000

The ratio of debt per inhabitant is £16, but if the cost of State railways be deducted the debt will be found not to exceed 9 millions, or £4 per inhabitant. The reduced debt is equal to 7 per cent. of the wealth of the colony.

XXII

ARGENTINA

THIS is the most important of Spanish-American republics, forming a confederacy of fourteen States and nine Territories, with an area six times as large as France, and a population of 4,000,000 souls, viz. :—

	Sq. Miles.	Population.	Per Sq. Mile.
Buenos Ayres . . .	106,000	1,584,000	15
Santa Fé . . .	86,000	404,000	11
Entre Ríos . . .	88,000	302,000	8
Other States . . .	1,030,000	1,680,000	1
Total . . .	1,210,000	3,970,000	3

The census of 1869 showed a population of 1,837,000, and the increase since then is supposed to be made up of 770,000 immigrants and 1,363,000 surplus of births over deaths. The actual number of immigrants in the interval was 1,810,000, but of these it is supposed that 58 per cent. died or returned to Europe. Natural increase is estimated at 52,000 souls yearly during the said period of twenty-six years, which is equal to 16 per thousand inhabitants, against 21 in Australia, and 14 in Canada.

The foreign-born population is about 18 per cent. of the total, comprising 450,000 Italians and 320,000 of other nationalities, among the latter being 25,000 British subjects. In the provinces of Buenos Ayres, Entre Ríos, and Sánta Fé there are 122 males to 100 females, the result of immigration, the records of thirty years showing that the sexes of arrivals were as 73 males to 27 females: in the Upper Provinces the number of females exceeds that of males. The city of Buenos

Ayres is abnormally large for a country of 4 millions of people, its population being as one-sixth of the republic, and having risen from 177,000 in 1869 to 663,000 in 1895. It is not only the largest city in the Southern Hemisphere, but has no rival in America outside the United States, its growth having been unhealthily stimulated in late years by the creation of 1240 large factories, under the Protective tariff introduced in 1878, and in this way a numerous proletarian population has sprung up. At the same time there are seven of the fourteen provinces so sparsely settled that there are not five inhabitants to the square mile.

AGRICULTURE

Twenty years ago tillage was in its infancy, the rural interests of the republic being then almost wholly pastoral : in 1895 the value of pastoral products held the second place. The area under crops is shown as follows :—

Year.	Acres.		
	Wheat.	Sundries.	Total.
1874 . . .	270,000	550,000	820,000
1894 . . .	7,300,000	5,150,000	12,450,000

Down to the year 1880 the population subsisted mainly on United States flour, the home-grown crop hardly sufficing for two months' supply. There has been an increasing surplus of grain for exportation during the last ten years, the shipments for the quinquennium 1889–93 averaging 920,000 tons of grain yearly, three-fourths wheat. The tillage area in 1894 was approximately as follows :—

	Acres.		
	Wheat.	Sundries.	Total.
Buenos Ayres . . .	2,420,000	3,120,000	5,540,000
Santa Fé . . .	3,800,000	900,000	4,700,000
Other provinces . . .	1,080,000	1,130,000	2,210,000
Total . . .	7,300,000	5,150,000	12,450,000

It cannot be said that Argentina is specially suited for agriculture : the soil of Buenos Ayres, Santa Fé, Entre Ríos,

Corrientes, Misiones, Tucuman, and Salta is extremely fertile, but these provinces are subject alternately to drought and locusts. Even in good seasons the crops are light, wheat rarely exceeding 10 bushels per acre, except in the small zone of irrigated lands in Mendoza and San Juan, where a yield of 30 bushels is not uncommon. Vineyards have doubled in area and production in the last ten years, at present covering 100,000 acres, and producing 15 million gallons of wine. This suffices for about half the consumption, which averages 7 gallons per inhabitant: there is also a large industry in the manufacture of artificial wines, of so deleterious a character that physicians consider the death-rate is much increased by this cause. Sugar was little cultivated before 1880, but the import duty of 100 per cent. *ad valorem* has favoured home-production, which now reaches 60,000 tons, Tucuman standing for two-thirds of the total. Lucerne or Alfa is a crop of great importance, covering 2 million acres, in which sheep and cattle are fattened for local markets or Chile, as well as for the business of exporting frozen sheep to England. All the most improved agricultural machinery from United States and England is in use, the tillage farms being in the hands of 300,000 Italian, Swiss, and German settlers. It is not uncommon to see a wheat-field of 5000 acres, the owner of which probably landed at Buenos Ayres without a dollar, not more than twenty years ago. Most of the grain-farms, however, are 60-acre lots taken up since 1885 by settlers who had no capital, on condition of giving the owner of the land half the crop during ten years, after which the land becomes the settler's property. Sometimes the owner prefers to sell the land to the settler at £1 per acre, payable in instalments extending over five or ten years, with interest at 6 per cent., or else he lets the land at 2 shillings an acre. This last method is not considered advisable, as the tenant after a few years throws up the land. Experienced farmers say that it pays them well to sell their wheat at the nearest railway station at £4 a ton, say 16 shillings the English quarter,

which means a yield of 1 pound sterling an acre, as it usually takes 4 acres to produce a ton.

Pastoral industry is better suited to the country: it has been the source of its prosperity, and is less exposed to locusts and bad seasons than tillage, besides yielding a larger product, as measured by value, to the number of men employed. Comparing the figures for 1894 with those for 1864 we find that cattle have doubled, sheep nearly quadrupled, in the interval:—

Year.	Horses.	Cows.	Sheep.	Value, £.
1864 .	3,870,000	10,220,000	23,110,000	31,800,000
1894 .	4,440,000	22,870,000	80,220,000	51,500,000

The above seems to show a satisfactory increase, and yet the relative decadence of pastoral interests is indisputable: for example, the value of live-stock in 1864 was equivalent to £20 per inhabitant, and now it is only £13. The flocks increased six-fold in twenty years ending 1870, but in the last twenty-five years they have not quite doubled. There are millions of acres in the Pampas suitable for sheep-farming, which could carry 200 millions of sheep, were it not for a school of pseudo-economists at Buenos Ayres who decry pastoral industry, and endeavour to turn all the energies of the nation to tillage and manufactures. The foremost pastoral provinces are Buenos Ayres and Entre Rios, viz.:—

	Buenos Ayres.	Entre Rios.	Other Provinces.	Total.
Cattle .	9,600,000	4,100,000	9,170,000	22,870,000
Sheep .	63,800,000	5,600,000	10,800,000	80,200,000

The export of wool rose from 9000 tons in 1850 to 61,000 in 1870, and at present averages 160,000 tons: this gives a ratio of $4\frac{1}{2}$ lbs. fleece, as compared with $5\frac{1}{2}$ in Australia. But as River Plate wool is so dirty that when washed it gives only 35 per cent. of its weight, while Australian gives 55 per cent., it comes to pass that 100 Argentine sheep give 160 lbs. of washed wool, and 100 Australian 300 lbs., or nearly double. Nevertheless, sheep-farming in Argentina has some great advantages over the same business in Australia. The ordinary sheep-run in the Pampas carries 1200 sheep to the square

mile, in Australia only 300; the price of pasture land in Argentina averages £60 per square mile, in Australia £400; and whereas water is often scarce in Australia it may be found anywhere in the Pampas at a depth not exceeding 30 feet. Most of the best sheep-farms of Buenos Ayres are those of Irish and Scotch settlers: as Consul Cowper said in his report (1872): "To the Irish settlers is chiefly due the progress of Buenos Ayres in pastoral interests," and for the same reason Governor Saavedra declared the Irish sheep-farmers "Benemeritos de la Patria." Many of them have from 50,000 to 100,000 sheep. Cattle-farming is mostly in the hands of Argentines, an ordinary farm or estancia of 100 square miles having usually 10,000 head of horned cattle and 2000 wild horses, the cattle divided into herds of 2000, and requiring two men for each herd. The total value of tillage and pastoral products is 46 millions sterling, viz. —

	Product, £.	Home Consumption, £.	Export, £.
Grain . . .	15,000,000	9,200,000	5,800,000
Sundries . . .	9,000,000	8,500,000	500,000
Wool . . .	8,000,000	100,000	7,900,000
Meat . . .	9,700,000	7,300,000	2,400,000
Hides, &c. . .	4,300,000	2,500,000	1,800,000
 Total . . .	 46,000,000	 27,600,000	 18,400,000

The total farming product is equal to £11 per inhabitant, as compared with £12 in the United States, and £17 in Australia. The estimated value of farms, stock, &c., in 1890 was 198 millions sterling; the gross product was therefore 23 per cent. on capital, as compared with 18 in Australia, 19 in Canada, and 20 in United States.

MANUFACTURES

The census of 1887 for the city of Buenos Ayres showed 1240 factories, with 42,300 hands and 6300 horse-power of steam, consuming raw material worth 9½ millions sterling, from which it may be inferred that the value of output would

be 30 millions sterling. Buenos Ayres is believed to stand for three-fourths of the manufactures of the republic, which may, therefore, be estimated at 40 millions sterling.

MINING

The first mining enterprise in the present century was the Famatina Mining Company, started by some London capitalists in 1824, but the manager was shot three years later, and the works were abandoned. An attempt was made in 1861 to work the silver-mines of Tontal in San Juan, and in 1873 the Carolina gold-mines in San Luis. Mr. Hoskold, present Director-General of Mining Department, thinks that the San Juan mines may one day prove very rich. Mr. Lafone's copper "ingenio" at Catamarca has worked for forty years continuously, the ore yielding 20 per cent. of bar copper. In 1869 Rickard's report on Argentine mines showed 2700 miners, turning out minerals to the yearly value of £90,000, equal to £33 a man, a very miserable result. Notwithstanding the railways since made through San Juan and other mining provinces, the business has fallen since Rickard's time, the export of minerals and metals now hardly reaching £70,000. In 1895-96 the sheep-farmers of Chubut have found gold at many places along the Andine slopes, from the Teca valley to Lake Fontana.

COMMERCE

Official reports show that foreign trade has multiplied nine-fold in half a century, viz. :—

Year.	Imports, £.	Exports, £.	Total, £.
1850 :	2,100,000	2,200,000	4,300,000
1893 :	19,200,000	18,500,000	37,700,000

Since 1880 the official returns are misleading, as the Government puts an excessive valuation on imports. The

aggregate imports from Great Britain, France, Germany, Belgium, and United States during five times to December 1893 appear in Argentine Customs-books as £88,700,000, whereas, according to the export tables of those countries they were worth at shipment £70,600,000, to which may be added 10 per cent. for freight and charges, making them worth £77,700,000 on arrival in Argentina. We must, therefore, deduct one-eighth from the Argentine statement of imports, and then the account for five years to December 1893 will stand thus, in the aggregate:—

	Nominal Value, £.	Real Value, £.
Imports	112,200,000	98,000,000
Exports	106,600,000	106,600,000

Exports unfortunately exceed imports, but this is precisely what is aimed at in every President's Message at the opening of Congress and in all fiscal legislation. The averages of trade in the last five years showed thus:—

	Imports from £.	Exports to £.	Total, £.	Ratio.
Great Britain .	7,400,000	3,600,000	11,000,000	26·9
France . .	2,800,000	5,400,000	8,200,000	20·1
Germany . .	2,000,000	2,700,000	4,700,000	11·4
Belgium . .	1,700,000	2,900,000	4,600,000	11·2
Various States .	5,700,000	6,700,000	12,400,000	80·4
Total . .	19,600,000	21,300,000	40,900,000	100·0

The city of Buenos Ayres stands for 70 per cent., Rosario 15 per cent., of the trade of the republic.

Shipping.—The Argentine merchant-navy consists of 170 vessels, having an aggregate of 60,000 tons register, and 160,000 carrying-power.

Internal Trade.—This comprises farm products 46, manufactures 40, and imports 19 millions, in all 105 millions sterling, equal to £26 per inhabitant, as compared with £40 in Canada and £48 in Australia.

Railways.—The first line was opened from Buenos Ayres to Flores, 6 miles, in 1857, but very little was done in the way

of construction during the ensuing twenty years, the total length in 1877 being only 1300 miles. Since then great progress has been made, the lines (including rural tramways) open in December 1894 having a length of 8500 miles, which represented a cost of 88 millions sterling. Most of the lines are of 66-inch gauge, but those of Entre Ríos and Corrientes are of $56\frac{1}{2}$ inch, and the Chaco, Tucuman, and others $39\frac{1}{2}$ inches. Traffic returns for 1893, per mile, compare with those of Australia and South Africa thus:—

	Argentina, £.	Australia, £.	S. Africa, £.
Receipts	511	798	1,150
Expenses	301	497	670
Profit	210	301	480

The result is 2 per cent. on capital, against 3 and 5 per cent. in Australia and South Africa. Some lines run parallel for hundreds of miles, others begin nowhere and end nowhere: such lines were never meant to pay, but simply jobs, and as they enjoyed Government guarantees they entailed heavy burthens on the Treasury. In 1893 there were four lines, of 640 miles aggregate, which did not earn enough to pay working expenses. Nevertheless there are 3300 miles of lines that give a net profit exceeding 3 per cent. yearly on the cost of construction. All the Government lines have been sold to Companies, except 310 miles.

Banks.—There are fourteen State and thirty-eight other banks. Gold or silver is rarely seen, the currency consisting of 300 millions of inconvertible notes, nominally worth 60 millions £ sterling, but the premium on gold is so high that it takes 55 shillings in notes to buy a sovereign. There is also a kind of subsidiary currency called Cedulas, amounting to 450 millions, say 90 millions £ sterling, issued in different series, some of which are so depreciated that a Cedula of £20 may be bought for 20 shillings. Between bank-notes and Cedulas the total issue is 750 millions.

EARNINGS AND WEALTH

The earnings and wealth of the people are approximately as follows :—

Earnings.	Millions £.	Wealth.	Millions £.
Agricultural	28	Land	129
Manufacturing	20	Cattle, &c. . . .	69
Trade	10	Railways	88
Transport	11	Factories	13
House-rent	7	Houses	94
Domestics	5	Furniture	47
Public service	5	Merchandise	53
Professions	9	Sundries	123
Total	95	Total	616

Earnings average £24 per inhabitant, as compared with £36 in Canada, and £44 in the United States. Wealth averages £154 per head, against £196 in Canada, and £256 in Australia.

Land.—The price varies from £2 an acre in the province of Buenos Ayres to a shilling in some of the remote territories : it ranges from 10 to 20 shillings in Santa Fé and Entre Ríos, and is usually 4 shillings in most of the other provinces. The above official valuation of 129 millions sterling includes only lands actually occupied, covering 251 million acres, the average being, therefore, a little over 10 shillings an acre. There are also 193 million acres of good land, not occupied, which may sooner or later become worth 4 shillings an acre, say 38 millions sterling ; not to speak of 333 million acres of salt deserts, mountain ranges, &c., which are valueless.

Houses.—The assessed rental of the city of Buenos Ayres in 1887 was £5,600,000, and since that year the population has risen 40 per cent., building being, moreover, very active ; but the sales of property show a shrinkage of 30 per cent. in the value per square foot of building sites, so that the rental is now probably the same as in 1887, representing a capital value of 80 millions sterling. The other cities of the republic have an aggregate population equal to

90 per cent. of that of Buenos Ayres, but their house-property will hardly exceed 33 per cent. of that of the metropolis, say 27 millions, making 107 millions altogether. The ratio of house-property to population in Buenos Ayres is £121 per head, as compared with £124 in Sydney and £110 in Montreal.

FINANCE

The finances of thirty years may be summed up thus:—

	<u>Millions & Sterling.</u>			
	1864-75.	1876-85.	1886-93.	Total.
Revenue . . .	33	47	56	136
Expenditure . . .	44	54	88	186

Expenditure exceeded revenue by 50 millions sterling, and public debt rose from 5 millions in 1863 to 55 millions sterling in 1894, the Ministerial report in the latter year showing the foreign debt to be 44, the internal 11, millions sterling. This is exclusive of the paper-money guaranteed by Government, nominally 60 millions sterling. All the fourteen provinces have also their distinct budgets and debts, as well as the cities of Buenos Ayres, Rosario, &c. The total revenues and debts in 1894 summed up as follows:—

	National, £.	Provincial, £.	Total, £.
Revenue . . .	7,800,000	2,800,000	10,100,000
Debt . . .	55,200,000	37,200,000	92,400,000

The National Government draws 82 per cent. of its revenue from Customs. The total amount raised by taxes, national and provincial, is £9,200,000, or a little under 10 per cent. of the earnings of the people, against 4½ per cent. in Canada and 5 in Australia. Debt, as shown above, is 92½ millions sterling, equal to 15 per cent. of national wealth, against 8 per cent. in Canada and 10 per cent. in Australia.

XXIII

URUGUAY

THIS is the smallest of South American States, but the most favoured in climate, soil, and geographical position. Its area is 72,000 square miles, or twice the size of Portugal, with a population of 730,000, say 10 to the square mile, this being the densest ratio in any part of the continent, except Chile. The population has more than trebled since 1860, when it was only 220,000, the increase being made up of 218,000 immigrants and 292,000 surplus of births over deaths. The country was desolated by the "long war," between Generals Oribe and Rivera, which lasted from 1836 to 1852. Vital statistics for five years to 1890 show birth-rate 40, death-rate 19, increase 21, per thousand. About 60 per cent. of the population are natives, 15 per cent. Italians, and 25 per cent. made up of Spaniards, French, &c. The city of Montevideo has quadrupled since 1858, at present counting 240,000 inhabitants, one-half Europeans.

AGRICULTURE

Colonists from the Canary Islands and Italy began to settle in the department of Canelones, near Montevideo, in 1850, and some Waldensians near Colonia in 1857: in this way tillage began. The area under crops showed as follows:—

Year.	Acres.		
	Grain.	Sundries.	Total.
1855 . . .	110,000	70,000	180,000
1894 . . .	900,000	224,000	1,124,000

The grain-crop averages 200,000 tons, three-fourths wheat, and the value of all tillage products is estimated at 2 millions sterling.

Pastoral interests are of much higher importance, the live-stock including 5,400,000 cattle and 10,500,000 sheep: the latter have quadrupled since 1860, but horned cattle have remained stationary. The latter, meantime, constitute the principal industry, sheep holding a secondary place, which is the reverse of the position in Argentina. If we reduce all live-stock to the common denominator of sheep, counting a cow or horse as ten, we shall find that Uruguay has more live-stock per inhabitant than any other country in the world. The ratio per inhabitant is as follows:—

		Sheep.	Cows.	Horses.	Equivalent in Sheep.
Uruguay		14	7·4	0·5	93
Argentina		17	5·0	1·0	77
Australia		31	3·1	0·5	67

The official value of live-stock is £15,400,000, equal to £21 per inhabitant, against £13 in Argentina, and £30 in Australia. The wool-clip averages 25,000 tons, or 5½ lbs. per sheep, against 4½ in Argentina; the wool is, moreover, of better quality than Argentine, giving 45 per cent. washed, against 35 per cent. Argentine: thus 100 Uruguay sheep produce 250 lbs. washed wool, and the same number of Argentine only 160 lbs. The value of pastoral products is estimated at 6 millions sterling, making a total of 8 millions between tillage and pastoral, the annual export of farm products reaching £5,800,000. There is always a surplus of food, the country exporting 40,000 tons of wheat and 140,000 of meat yearly. Climate and soil are peculiarly adapted for tillage, and there is abundance of wood and water, the territory being intersected by numberless rivers. No part of the republic is more than 150 miles from a seaport.

MANUFACTURES AND MINES

The only factory of any magnitude is Liebig's at Fray Bentos, founded in 1863 for making beef extract, which employs 800 workmen, and kills as many as 1000 cattle daily. At Montevideo and the minor towns the usual small handicrafts occupy about 20,000 persons. There is no mineral industry worth mention, although copper-mines were worked in the last century. Superior marble exists at Maldonado, which is sometimes used for public buildings at Montevideo. Gold was found at Cuyapirú, on the Brazilian frontier, in 1859, and an English company introduced machinery ten years later, the works afterwards passing into the hands of a French company : in the last five years the annual product has averaged 4500 oz., worth £15,000. Agate is found in abundance near Salto.

COMMERCE

Foreign trade has increased only 50 per cent. in twenty years, that is, it has not kept pace with population, being now only £14 per inhabitant, as compared with £18 in 1873, viz. :—

Year.	Imports, £.	Exports, £.	Total, £.
1873 . .	8,600,000	8,100,000	6,700,000
1893 . .	4,200,000	5,900,000	10,100,000

Protective tariffs against imports act as a check on commerce, and retard progress in every direction. The averages for five years to December 1893 showed thus :—

	Imports from, £.	Exports to, £.	Total, £.	Ratio.
Great Britain . .	1,500,000	900,000	2,400,000	21·7
France . .	700,000	1,200,000	1,900,000	17·8
Brazil . .	400,000	900,000	1,300,000	10·9
Other countries . .	2,700,000	2,700,000	5,400,000	49·1
Total . .	5,800,000	5,700,000	11,000,000	100·0

Internal Trade.—This amounts to about 17 millions sterling, or £23 per inhabitant, which is the same ratio as in Argentina.

Railways.—The Central Uruguay was begun in 1867, but it was not until 1872 that the first section was opened to Santa Lucia, 40 miles. At present there are 1060 miles, which have cost 11 millions sterling : the Companies received Government guarantees amounting to £400,000 a year, but in 1892, in view of the painful condition of Uruguayan finances, it was agreed to reduce the guarantees to £200,000 a year. The net earnings of the lines do not quite reach 1½ per cent. on capital, whereas the Argentine give 2 per cent. Traffic earnings per mile compare thus :—

	Receipts, £.	Expenses, £.	Profit, £.
Uruguay	381	235	146
Argentine	511	301	210

Although the British shareholders have lost money the lines have been of great benefit to the country, the population having doubled since the first line was opened twenty-three years ago.

Banks.—The “wild-cat” speculations of 1887–89 brought on a crisis in which the State banks collapsed, ruining thousands of artisans and other innocent persons. The total stock of money is estimated at 4 millions sterling, mostly gold. There is no convertible currency.

EARNINGS AND WEALTH

The earnings and wealth of the people are approximately as follows :—

Earnings,	£	Wealth,	£
Rural	6,400,000	Farms	42,300,000
Commercial	3,400,000	Houses	31,200,000
Public service	1,800,000	Railways	11,000,000
Various	5,000,000	Sundries	35,500,000
Total	16,600,000	Total	120,000,000

Real Estate.—The official value of lands in 1890 was £23,100,000, of houses £31,200,000, making a total for real estate of £54,300,000, held as follows:—

	Owners.	Value, £.	£ per Owner.
Natives . . .	22,774	25,200,000	1,150
Italians . . .	8,246	7,200,000	870
Spaniards . . .	7,158	6,400,000	900
Brazilians . . .	4,595	7,500,000	1,630
French, &c. . .	5,019	8,000,000	1,590
Total . . .	47,792	54,300,000	1,140

The official valuation of land comes out at an average of 10 shillings an acre, the area being 46,100,000 acres, but it is impossible to buy good land under £1 per acre. The house-property of Montevideo was valued in 1891 at £26,800,000, equal to £113 per inhabitant, the twenty-four minor towns making up an aggregate of £4,400,000, equal to £55 per inhabitant. Real estate altogether forms 45 per cent. of total wealth, as compared with 38 per cent. in Argentina.

FINANCE

The finances of forty-three years may be summed up as follows:—

	1851-50, £.	1881-93, £.	Total, £.
Revenue . . .	25,100,000	35,400,000	60,500,000
Expenditure . . .	36,700,000	48,900,000	80,600,000

Expenditure was 33 per cent. over revenue, and thus the debt rose from 2 millions in 1850 to 22 millions in 1894. The budget is always framed so as to show a probable surplus of revenue, but at the end of the year the result is the reverse: as a rule the budget is reliable as to income, but not as to expenditure; that of 1893 was as follows:—

Customs . . .	£1,800,000	Debt . . .	£1,100,000
Sundries . . .	1,900,000	Government . . .	2,400,000
Revenue . . .	3,700,000	Expenditure . . .	8,500,000

376 INDUSTRIES AND WEALTH OF NATIONS

The amount raised by taxation is £3,400,000, equal to 21 per cent. of national earnings, against 10 per cent. in Argentina, and 5 in Australia. Public debt consists of £20,700,000 due in London, and £1,500,000 at Montevideo, together £22,200,000, equal to 18½ per cent. of national wealth, as compared with 15 in Argentina, and 10 per cent. in Australia.

COMPARATIVE TABLES

No. I.—Comparative Tables of Nations.

	Area. Sq. Miles.	Population.	Earnings. Millions £.	Wealth. Millions £.	Steam. Horse- power.
United Kingdom . . .	120,100	39,500,000	1,423	11,806	12,970,000
France . . .	204,100	38,400,000	1,199	9,690	4,915,000
Germany . . .	208,700	52,200,000	1,284	8,052	7,650,000
Russia . . .	1,956,000	105,800,000	1,004	6,425	2,790,000
Austria . . .	240,900	48,400,000	707	4,512	2,390,000
Italy . . .	110,600	31,200,000	436	3,160	1,870,000
Spain . . .	194,900	17,600,000	273	2,380	1,130,000
Portugal . . .	32,500	4,700,000	64	411	140,000
Sweden and Norway	295,000	6,900,000	142	790	790,000
Denmark . . .	14,800	2,200,000	60	506	230,000
Holland . . .	12,600	4,800,000	124	880	580,000
Belgium . . .	11,400	6,400,000	181	988	950,000
Switzerland . . .	16,000	3,000,000	70	492	380,000
Danub. States . . .	105,400	11,400,000	147	1,026	185,000
Greece . . .	25,000	2,200,000	28	222	175,000
 Europe . . .	 3,548,000	 369,700,000	 7,142	 51,345	 36,645,000
United States . . .	2,970,000	70,700,000	3,116	16,350	16,940,000
Canada . . .	3,314,000	5,100,000	183	1,003	1,170,000
Australia . . .	3,160,000	4,200,000	215	1,076	825,000
Argentina . . .	1,210,000	4,000,000	95	616	240,000
 Total . . .	 13,202,000	 453,700,000	 10,751	 70,385	 55,820,000

No. II.—Population, Urban and Rural.

(Urban comprises all cities or towns over 10,000 population ; rural, the rest.)

	Population.			Inhab. per Sq. Mile.	
	Urban.	Rural.	Total.	1821.	1896.
United Kingdom . . .	20,600,000	17,200,000	37,800,000	172	330
France . . .	9,200,000	29,200,000	38,400,000	147	188
Germany . . .	15,600,000	36,600,000	52,200,000	130	250
Russia . . .	10,900,000	86,900,000	97,800,000	26	54
Austria . . .	5,600,000	35,800,000	41,400,000	101	181
Italy . . .	5,300,000	25,400,000	30,700,000	140	284
Spain . . .	2,900,000	14,700,000	17,600,000	61	90
Portugal . . .	400,000	4,300,000	4,700,000	109	142
Sweden and Norway	1,000,000	5,800,000	6,800,000	12	23
Denmark . . .	500,000	1,700,000	2,200,000	73	150
Holland . . .	1,800,000	2,900,000	4,700,000	198	380
Belgium . . .	1,700,000	4,600,000	6,300,000	298	560
Switzerland . . .	500,000	2,500,000	3,000,000	127	187
Danub. States . . .	900,000	10,500,000	11,400,000	60	108
Greece . . .	300,000	1,900,000	2,200,000	44	88
 Europe . . .	 27,200,000	 280,000,000	 357,200,000	 58	 104
United States . . .	17,400,000	45,200,000	62,600,000	6	24

No. III.—*Occupations.*

(000's omitted).

	Agriculture.	Manufactures.	Commerce,	Total.	Per Cent of Pop.
United Kingdom.	2,530	9,030	5,260	16,820	44·4
France.	7,220	4,720	5,350	17,290	45·3
Germany.	9,350	9,230	5,320	23,900	45·8
Russia.	34,650	7,470	6,180	48,300	45·0
Austria.	12,940	4,620	3,090	20,650	47·5
Italy.	6,840	3,430	2,790	13,060	43·0
Spain.	4,080	1,750	1,500	7,330	42·0
Portugal.	870	400	480	1,750	37·2
Sweden and Norway.	1,400	560	1,260	3,220	47·3
Denmark.	400	250	340	990	45·0
Holland.	460	400	1,900	2,160	46·0
Belgium.	720	1,880	840	2,940	46·6
Switzerland.	490	520	200	1,210	40·3
Danub. States.	3,680	760	690	5,130	45·0
Greece.	660	160	260	1,080	49·0
Europe.	86,290	44,680	34,860	165,830	45·5
United States.	10,740	5,960	14,920	31,610	45·0
Canada.	1,140	540	740	2,420	46·5
Australia.	440	630	710	1,780	42·5
Total.	98,610	51,800	51,230	201,640	46·3

No. IV.—*Energy.*

	Millions of Foot-tons Daily.				Foot-tons Per Inhab.
	Hand.	Horse.	Steam.	Total.	
United Kingdom.	3,200	6,330	51,880	61,410	1,570
France.	8,500	9,300	19,660	32,460	846
Germany.	4,260	11,500	30,600	46,360	900
Russia.	9,100	62,400	11,200	82,700	780
Austria.	3,530	10,700	9,560	23,790	560
Italy.	2,750	3,800	5,480	12,030	400
Spain.	1,590	2,640	4,520	8,750	506
Portugal.	350	420	560	1,330	290
Sweden and Norway.	600	1,950	3,160	5,710	830
Denmark.	200	1,240	900	2,340	1,060
Holland.	420	810	2,300	3,530	750
Belgium.	560	810	3,800	5,170	830
Switzerland.	270	300	1,520	2,090	700
Danub. States.	1,020	2,860	740	4,620	405
Greece.	200	300	700	1,200	560
Europe.	81,550	115,360	146,580	293,490	800
United States.	6,400	54,600	67,760	128,760	1,860
British Colonies.	810	9,920	7,980	18,710	2,020
Total.	88,760	179,880	222,320	440,960	990

No. V.—*Steam-power (1895).*

	Effective Horse-power (000's omitted).			
	Fixed.	Railway.	Steamboat.	Total.
United Kingdom	2,200	4,800	5,970	12,970
France	825	3,600	490	4,915
Germany	2,200	4,555	895	7,650
Russia	350	2,200	240	2,790
Austria	480	1,780	130	2,390
Italy	160	1,000	210	1,370
Spain	50	600	480	1,130
Portugal	5	120	15	140
Sweden and Norway	40	380	420	790
Denmark	10	80	140	230
Holland	80	320	180	580
Belgium	380	500	70	950
Switzerland	40	340	—	380
Danub. States	—	185	—	185
Greece	—	40	135	175
Europe	6,820	20,450	9,375	36,645
United States	3,940	10,800	2,200	16,940
Canada	320	600	250	1,170
Australia	260	385	180	825
Total	11,340	32,285	12,005	55,580

No. VI.—*Growth of Steam.*

	Effective Horse-power.		
	1840.	1860.	1895.
United Kingdom	600,000	2,400,000	12,970,000
France	90,000	1,150,000	4,915,000
Germany	40,000	850,000	7,650,000
Russia	30,000	200,000	2,790,000
Austria	30,000	800,000	2,390,000
Italy	20,000	140,000	1,370,000
Spain	10,000	110,000	1,130,000
Scandinavia	5,000	80,000	1,020,000
Holland	10,000	100,000	580,000
Belgium	40,000	210,000	950,000
Various	5,000	80,000	880,000
Europe	880,000	6,120,000	36,645,000
United States	760,000	3,500,000	16,940,000
Colonies	10,000	230,000	1,995,000
Total	1,650,000	9,850,000	55,580,000

No. VII.—Cost of Energy Daily.

	Hand. £	Horse. £	Steam. £	Total. £	1,000 ft.-tons. Pence.
United Kingdom .	1,370,000	260,000	650,000	2,280,000	8·9
France .	1,160,000	340,000	240,000	1,740,000	12·8
Germany .	1,210,000	320,000	380,000	1,910,000	9·9
Austria .	1,010,000	300,000	120,000	1,430,000	14·3
Italy .	750,000	100,000	70,000	920,000	18·4
Spain and Portugal	540,000	80,000	60,000	680,000	16·3
Scandinavia .	260,000	90,000	50,000	400,000	12·0
Belgium .	180,800	20,000	50,000	250,000	11·5
Other States .	1,980,000	1,090,000	210,000	3,280,000	8·4
Europe .	8,460,000	2,600,000	1,830,000	12,890,000	10·5
United States .	3,380,000	1,820,000	850,000	6,050,000	11·1
Canada .	250,000	140,000	60,000	450,000	11·3
Australia .	200,000	100,000	40,000	340,000	9·1
Total .	12,290,000	4,660,000	2,780,000	19,730,000	10·7

No. VIII.—Product of Mines, Forests, and Fisheries.

	Millions £ Sterling per Annum.			
	Mines.	Forests.	Fisheries.	Total.
United Kingdom .	78	2	7	87
France .	16	14	5	35
Germany .	34	13	1	48
Russia .	12	40	2	54
Austria .	10	18	—	28
Scandinavia .	2	13	5	20
Belgium .	10	1	—	11
Other States .	7	15	4	26
Europe .	169	116	24	309
United States .	94	120	10	224
Canada .	5	17	4	26
Australia .	14	5	1	20
Total .	282	258	39	579

No. IX.—Freight Earnings.

Millions £ Sterling per Annum.

	Railways.			Shipping.	Roads, &c.	Total.
	Goods.	Passengers.	Total.			
United Kingdom .	46	38	84	54	31	169
France .	32	23	55	5	66	126
Germany .	52	19	71	9	62	142
Russia .	28	7	35	3	70	108
Austria .	25	7	32	1	43	76
Italy .	6	4	10	3	34	47
Other States .	19	12	31	14	94	139
Europe .	208	110	318	89	400	807
United States .	166	57	223	23	81	327
Canada .	7	3	10	3	8	21
Australia .	6	3	9	2	7	18
Total .	387	173	560	117	496	1,173

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No. X.—Areas Cultivated and Waste.

Millions of Acres.

	All	Crops.	Pasture.	Forest.	Mountain, &c.	Total.
United Kingdom . . .	8·9	20·1	27·8	3·0	26·3	77·2
France . . .	36·6	66·9	23·1	20·7	19·8	130·5
Germany . . .	38·0	65·2	21·7	34·5	12·1	133·5
Russia . . .	172·8	265·0	334·0	498·0	254·0	1,341·0
Austria . . .	41·9	52·3	33·1	43·0	21·1	149·5
Italy . . .	20·4	38·2	14·8	10·1	7·7	70·8
Spain . . .	20·8	32·2	21·0	16·4	5·5	125·1
Portugal . . .	2·6	3·9	7·7	1·2	8·0	20·8
Sweden and Norway . . .	4·6	9·0	6·1	64·4	110·9	190·4
Denmark . . .	3·0	4·5	2·6	0·6	1·7	9·4
Holland . . .	1·4	2·3	2·8	0·6	2·1	7·8
Belgium . . .	2·4	3·7	1·8	1·2	0·6	7·3
Switzerland . . .	0·9	1·3	3·9	2·1	2·9	10·2
Danub. States . . .	17·9	23·1	20·9	10·2	14·0	68·2
Greece . . .	1·2	2·3	5·9	2·0	5·7	15·9
Europe . . .	373·4	580·0	527·2	708·0	542·4	2,857·6
United States . . .	150·0	225·5	132·5	466·0	1,098·0	1,922·0
Canada . . .	9·8	19·9	15·3	1,250·0	834·8	2,120·0
Australia . . .	5·3	16·2	802·0	180·0	1,024·8	2,023·0
Argentina . . .	9·5	12·5	238·0	41·5	482·0	774·0
Total . . .	548·0	854·1	1,715·0	2,645·5	3,982·0	9,196·6

(The grain column is, of course, included in the second.)

No. XI.—Ordinary Grain Crops (1892–95).

Millions of Bushels.

	Wheat.	Barley.	Oats.	Maize.	Rye, &c.	Total.	Bush. Per Acre.
United Kingdom . . .	49	73	167	—	12	301	34
France . . .	303	44	216	27	134	724	20
Germany . . .	122	104	176	—	280	682	18
Russia . . .	322	236	590	105	867	2,120	12
Austria . . .	196	113	170	136	165	780	19
Italy . . .	122	8	18	68	17	233	11
Spain . . .	88	59	12	42	31	232	11
Portugal . . .	8	2	1	14	5	30	11
Sweden and Norway . . .	4	17	70	—	37	128	28
Denmark . . .	4	21	31	—	28	84	28
Holland . . .	5	5	15	—	16	41	30
Belgium . . .	18	3	26	—	27	74	31
Switzerland . . .	2	2	3	—	3	10	11
Danub. States . . .	101	46	18	101	12	278	15
Greece . . .	7	3	—	4	2	16	13
Europe . . .	1,351	736	1,513	497	1,636	5,733	16
United States . . .	467	88	824	2,151	45	3,575	24
Canada . . .	48	18	104	7	24	201	20
Australia . . .	38	2	17	9	—	66	12
Argentina . . .	77	6	—	42	—	125	13
Total . . .	1,981	850	2,458	2,706	1,705	9,700	18

No. XII.—*Cattle.*

	Number (000's omitted).					Value. Millions £.
	Horses.	Cattle.	Sheep.	Pigs.	Goats.	
United Kingdom . . .	2,100	10,900	30,900	4,200	600	202
France . . .	3,100	12,900	20,700	6,100	1,500	232
Germany . . .	3,800	17,600	13,600	12,100	3,100	303
Russia . . .	20,800	27,600	48,200	10,700	1,300	350
Austria . . .	3,600	14,200	14,400	9,100	1,400	161
Italy . . .	1,200	5,000	6,900	1,900	1,800	92
Spain . . .	900	2,100	16,500	1,900	2,800	46
Portugal . . .	150	600	8,000	1,000	900	11
Sweden and Norway .	650	3,500	2,700	800	400	41
Denmark . . .	400	1,700	1,300	800	—	26
Holland . . .	300	1,500	700	1,100	200	28
Belgium . . .	300	1,400	400	700	200	22
Switzerland . . .	100	1,200	300	400	400	18
Danub. States . . .	900	3,600	13,000	2,300	4,200	42
Greece . . .	100	400	2,900	—	2,500	5
Europe . . .	38,400	104,200	175,500	53,000	21,300	1,579
United States . . .	18,200	50,900	42,300	44,200	—	451
Canada . . .	1,400	4,200	3,500	1,700	—	47
Australia . . .	1,900	13,300	121,200	1,100	—	120
Argentina . . .	4,400	22,900	80,200	300	—	51
Total . . .	64,300	195,500	423,700	100,300	21,300	2,248

No. XIII.—*Production of Meat.*

	Tons Yearly.				Lbs per Inhab.
	Beef.	Mutton.	Pork.	Total.	
United Kingdom . . .	590,000	320,000	190,000	1,100,000	63
France . . .	700,000	210,000	290,000	1,200,000	67
Germany . . .	880,000	150,000	490,000	1,520,000	68
Russia . . .	1,380,000	480,000	430,000	2,290,000	50
Austria . . .	710,000	140,000	360,000	1,210,000	63
Italy . . .	250,000	70,000	70,000	390,000	30
Spain . . .	100,000	260,000	70,000	430,000	56
Portugal . . .	30,000	30,000	40,000	100,000	48
Sweden and Norway .	170,000	28,000	32,000	230,000	73
Denmark . . .	85,000	10,000	35,000	130,000	130
Holland . . .	80,000	10,000	40,000	130,000	60
Belgium . . .	75,000	5,000	30,000	110,000	39
Switzerland . . .	60,000	5,000	15,000	80,000	57
Danub. States . . .	175,000	150,000	75,000	400,000	78
Greece . . .	20,000	40,000	—	60,000	60
Europe . . .	5,305,000	1,908,000	2,167,000	9,380,000	57
United States . . .	2,410,000	370,000	2,050,000	4,830,000	160
Canada . . .	210,000	35,000	65,000	310,000	140
Australia . . .	290,000	260,000	20,000	570,000	315
Total . . .	8,215,000	2,573,000	4,302,000	15,090,000	75

No. XIV.—*Value of Products Yearly.*

Millions £ Sterling.

	Grain.	Green Crops.	Meat.	Dairy.	Sundries.	Total.
United Kingdom . . .	50	76	56	33	16	230
France . . .	130	154	56	46	30	416
Germany . . .	109	153	63	60	32	417
Russia . . .	258	112	87	45	38	540
Austria . . .	120	90	51	37	21	319
Italy . . .	53	88	20	20	23	204
Spain . . .	39	55	20	12	9	135
Portugal . . .	5	13	4	2	2	26
Sweden and Norway . . .	15	8	11	8	4	46
Denmark . . .	12	7	6	8	2	35
Holland . . .	6	12	6	10	2	36
Belgium . . .	12	17	5	8	2	44
Switzerland . . .	2	7	4	6	1	20
Danub. States . . .	38	19	16	6	4	83
Greece . . .	2	7	3	1	1	14
Europe . . .	851	818	407	302	187	2,565
United States . . .	217	269	163	87	77	813
Canada . . .	21	12	11	9	4	57
Australia . . .	10	12	8	7	33	70
Argentina . . .	15	9	10	1	11	46
Total . . .	1,114	1,120	599	406	312	3,551

No. XV.—*Product per Acre, Value.*

	Acres, Millions.		Millions £ Sterling.		Shillings Per Acre.	
			All		All	
	Tillage.	Farms.	Tillage.	Products.	Tillage.	Farms.
United Kingdom . . .	20·1	47·9	128	230	126	96
France . . .	66·9	90·0	284	416	84	92
Germany . . .	65·2	86·9	262	417	81	96
Russia . . .	265·0	589·0	370	540	29	18
Austria . . .	52·3	85·4	210	319	80	75
Italy . . .	38·2	53·0	141	204	74	77
Spain . . .	32·2	53·2	94	135	59	51
Portugal . . .	3·9	11·6	18	26	92	45
Sweden and Norway . . .	9·0	15·1	23	46	51	61
Denmark . . .	4·5	7·1	19	35	84	99
Holland . . .	2·3	5·1	18	36	156	141
Belgium . . .	3·7	5·5	29	44	156	160
Switzerland . . .	1·3	5·2	9	20	188	77
Danub. States . . .	23·1	44·0	57	83	49	38
Greece . . .	2·3	8·2	9	14	78	34
Europe . . .	580·0	1,107·2	1,669	2,565	58	47
United States . . .	225·5	368·0	486	813	43	45
Canada . . .	19·9	35·2	33	57	33	32
Australia . . .	16·2	818·2	22	70	28	2
Total . . .	841·6	2,318·6	2,210	8,505	53	30

No. XVI.—Agricultural Capital.

	Value, Millions £ Sterling.				£ Sterling.	
	Land.	Cattle.	Sundries.	Total.	Per Acre.	Per Hand.
United Kingdom . . .	1,636	202	189	2,077	43	823
France . . .	2,580	232	281	3,093	34	430
Germany . . .	1,977	303	228	2,508	29	268
Russia . . .	2,113	350	247	2,710	5	79
Austria . . .	1,473	161	163	1,797	21	138
Italy . . .	1,180	92	127	1,399	27	204
Spain . . .	1,056	46	110	1,212	23	297
Portugal . . .	138	11	15	164	14	190
Sweden and Norway	212	41	25	278	18	198
Denmark . . .	205	26	23	254	39	635
Holland . . .	240	28	27	295	38	640
Belgium . . .	300	22	32	354	63	492
Switzerland . . .	138	18	16	172	32	350
Danub. States . . .	420	42	46	508	12	137
Greece . . .	94	5	10	109	14	165
Europe . . .	13,812	1,579	1,539	16,930	15	196
United States . . .	3,314	451	377	4,142	12	385
Canada . . .	230	47	28	305	9	268
Australia . . .	236	120	36	392	—	890
Total . . .	17,592	2,197	1,980	21,769	9	220

No. XVII.—Production of Food.

	Tons (000's omitted).			Wine, Million Gallons.	Total, Equivalent Tons Grain.
	Grain.	Potatoes.	Meat.		
United Kingdom . . .	7,520	6,100	1,100	—	18,400,000
France . . .	18,100	12,800	1,200	880	40,800,000
Germany . . .	17,040	31,800	1,520	80	40,600,000
Russia . . .	53,000	14,100	2,290	70	76,700,000
Austria . . .	19,500	10,000	1,210	112	33,630,000
Italy . . .	6,700	750	390	730	17,330,000
Spain . . .	5,800	1,500	430	596	15,700,000
Portugal . . .	750	270	100	80	2,430,000
Sweden and Norway	3,200	2,100	230	—	5,740,000
Denmark . . .	2,100	450	130	—	3,290,000
Holland . . .	1,020	2,250	130	—	2,810,000
Belgium . . .	1,850	3,600	110	—	3,930,000
Switzerland . . .	250	1,200	80	22	1,510,000
Danub. States . . .	6,950	—	400	180	11,950,000
Greece . . .	400	240	60	36	1,320,000
Europe . . .	144,180	87,160	9,380	2,786	276,140,000
United States . . .	89,400	7,480	4,830	30	130,830,000
Canada . . .	5,020	1,200	310	—	7,900,000
Australia . . .	1,650	600	570	4	6,450,000
Argentina . . .	3,100	—	410	15	6,550,000
Total . . .	243,350	96,440	15,500	2,835	427,870,000

(Grain includes what is used for the people and also for cattle.)

No. XVIII.—*Value of Food Produced for Human Use.*

	Millions £ Sterling.						
	Grain.	Meat.	Liquor.	Dairy.	Sundries.	Total.	
United Kingdom . . .	25	55	85	33	45	243	
France	88	56	71	46	57	318	
Germany	83	63	70	60	95	371	
Russia	175	87	22	45	91	420	
Austria	80	51	29	37	64	261	
Italy	42	20	38	20	40	160	
Spain	22	20	37	12	14	105	
Portugal	5	4	7	2	6	24	
Sweden and Norway . .	10	11	5	8	7	41	
Denmark	5	6	2	8	2	23	
Holland	4	6	5	10	7	32	
Belgium	8	5	12	8	5	38	
Switzerland	2	4	2	6	2	16	
Danub. States	26	16	7	6	3	58	
Greece	2	3	2	1	2	10	
Europe	577	407	394	302	440	2,120	
United States	97	163	61	87	127	535	
Total	674	570	455	389	567	2,655	

No. XIX.—*Value of Food Consumed.*

	Millions £ Sterling.						Shillings. per Inhab.
	Grain.	Meat.	Liquor.	Dairy.	Sundries.	Total.	
United Kingdom . . .	61	91	92	55	82	381	194
France	95	62	66	44	73	340	176
Germany	102	72	71	62	99	406	158
Russia	151	86	23	43	91	394	74
Austria	76	45	28	36	59	244	114
Italy	45	18	36	20	38	157	104
Spain	25	20	33	12	13	103	114
Portugal	6	4	5	2	6	23	96
Sweden and Norway . .	14	11	5	6	7	43	122
Denmark	6	3	2	3	2	16	144
Holland	13	6	5	5	9	38	160
Belgium	15	7	13	9	7	51	164
Switzerland	4	5	3	4	5	21	140
Danub. States	17	16	6	6	5	50	87
Greece	2	3	1	1	3	10	90
Europe	632	449	389	308	499	2,277	124
United States	90	129	63	85	158	525	150
Total	722	578	452	393	657	2,802	126

No. XX.—*Value of Manufactures Produced.*

	Millions £ Sterling.							£ per inhab.
	Tex- tiles.	Hard- ware.	Leather.	Food.	Cloth- ing.	Sun- dries.	Total.	
United Kingdom	191	142	59	127	84	273	876	22
France	115	47	45	113	69	207	596	15
Germany	108	105	66	136	69	207	690	13
Russia	76	15	57	59	57	116	380	4
Austria	56	19	40	81	39	93	328	8
Italy	37	4	16	52	23	58	190	6
Spain	19	5	14	34	14	35	121	7
Sweden and Norway }	8	7	8	14	7	18	62	9
Holland	8	1	5	13	5	17	49	11
Belgium	17	19	6	36	10	30	118	19
Switzerland	12	2	3	7	5	12	41	14
Other States	11	3	17	35	15	34	115	6
Europe	658	369	336	706	397	1,100	3,566	10
United States	161	229	106	329	111	1,016	1,952	28
Colonies	7	5	8	43	19	76	158	17
Total	826	603	450	1,078	527	2,192	5,676	12

No. XXI.—*Production of Textiles.*

	Value £ Sterling (000's omitted).					Total.
	Cottons.	Woollens.	Silks.	Linens, &c.		
United Kingdom	92,100	61,700	6,000	31,400	191,200	
France	22,400	44,700	28,200	19,800	115,100	
Germany	35,400	42,200	16,500	14,100	108,200	
Russia	20,400	29,000	3,200	23,900	76,500	
Austria	18,400	14,500	4,500	18,300	55,700	
Italy	12,900	5,800	9,000	9,200	36,900	
Spain	8,800	6,600	900	3,100	19,400	
Scandinavia	3,300	4,200	—	1,600	9,100	
Holland	4,600	2,100	—	1,300	8,000	
Belgium	5,200	5,300	900	5,500	16,900	
Switzerland	3,200	1,600	6,400	600	11,800	
Other States	2,800	5,400	200	1,100	9,500	
Europe	229,500	223,100	110,800	129,900	658,300	
United States	55,800	44,400	18,200	42,600	161,000	
Colonies	2,100	2,900	—	2,000	7,000	
Total	287,400	270,400	94,000	174,500	826,300	

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No. XXII.—Consumption of Chief Manufactures.

	Millions £ Sterling.				Shillings per Inhabitant.			
	Textiles.	Hard- ware.	Leather.	Total.	Textiles.	Hard- ware.	Leather.	Total.
United Kingdom	122	96	56	274	62	48	28	138
France	91	46	37	174	47	24	19	90
Germany	92	94	60	246	86	37	23	96
Russia	76	22	57	155	15	4	11	50
Austria	52	19	39	110	23	9	18	50
Italy	31	6	16	53	20	4	10	34
Spain	18	6	13	37	21	7	15	43
Scandinavia	13	5	11	29	28	11	24	63
Belgium	13	13	6	32	41	41	19	101
Other States	30	12	22	64	26	12	17	56
Europe	538	319	317	1,174	29	17	17	63
United States	182	222	108	512	53	64	31	148
Total	720	541	425	1,686	32	25	19	76

No. XXIII.—Consumption of Textiles.

	Value £ Sterling (000's omitted).				
	Cottons.	Woollens.	Silks.	Linens, &c.	Total.
United Kingdom	40,100	45,000	19,000	17,400	121,500
France	19,800	36,000	20,000	15,600	91,400
Germany	29,000	39,800	10,200	18,300	92,300
Russia	20,500	29,400	3,500	22,600	76,000
Austria	18,300	14,100	4,000	15,900	52,300
Italy	13,500	7,100	8,000	7,400	31,000
Spain	7,100	6,900	1,500	2,800	18,300
Belgium	5,000	5,500	1,400	1,300	18,200
Other States	15,600	18,600	2,600	5,000	41,800
Europe	168,900	202,400	65,200	101,300	537,800
United States	60,300	48,600	23,200	49,900	181,900
Total	229,200	250,900	88,400	151,200	719,700

No. XXIV.—Production and Consumption of Hides.

	Production, Tons.				Consumption, Tons.	
	Cow.	Sheep.	Pig, &c.	Total.	Hides.	Leather.
United Kingdom	49,000	40,000	13,000	102,000	196,000=	118,000
France	58,000	27,000	20,000	105,000	150,000=	90,000
Germany	79,000	18,000	36,000	133,000	220,000=	132,000
Russia	124,000	65,000	48,000	237,000	190,000=	114,000
Austria	64,000	19,000	27,000	110,000	133,000=	80,000
Italy	22,000	9,000	6,000	37,000	53,000=	32,000
Other States	69,000	54,000	27,000	150,000	180,000=	107,000
Europe	465,000	232,000	177,000	874,000	1,122,000=	673,000
United States	228,000	57,000	135,000	420,000	510,000=	306,000
Canada	19,000	5,000	6,000	30,000	40,000=	24,000
Australia	60,000	162,000	5,000	227,000	120,000=	72,000
Argentina, &c.	188,000	46,000	12,000	359,000	118,000=	71,000
Total	980,000	610,000	340,000	1,910,000	1,910,000=	1,146,000

No. XXV.—*Growth of Commerce.*

	Imports, millions £.			Exports, millions £.		
	1830.	1860.	1894.	1830.	1860.	1894.
United Kingdom . . .	42	210	408	46	165	274
France . . .	25	84	154	26	83	123
Germany . . .	22	65	198	24	65	148
Russia . . .	10	22	56	12	26	68
Austria . . .	7	21	58	8	27	66
Italy . . .	18	33	44	11	19	41
Spain . . .	4	14	32	3	11	27
Scandinavia . . .	4	13	50	4	12	39
Holland . . .	17	25	121	18	20	93
Belgium . . .	—	21	63	—	19	52
Other States . . .	8	30	69	9	33	55
Europe . . .	152	538	1,253	156	480	986
United States . . .	13	74	136	15	70	186
Canada . . .	2	12	24	1	11	24
Australia . . .	—	19	28	—	16	40
Total . . .	167	643	1,441	172	577	1,236

No. XXVI.—*Internal Trade.*

	Millions £ Sterling per Annum.					£ per Inhab.
	Agri- culture.	Manu- factures.	Mining, &c.	Imports.	Total.	
United Kingdom . . .	230	876	87	417	1,610	41
France . . .	416	596	36	154	1,201	31
Germany . . .	417	690	48	198	1,363	36
Russia . . .	540	380	54	56	1,030	10
Austria . . .	319	328	28	58	733	18
Italy . . .	204	190	8	44	446	15
Spain . . .	135	121	8	82	296	17
Portugal . . .	26	29	2	8	65	14
Sweden and Norway	46	62	19	31	158	23
Denmark . . .	35	19	1	19	74	34
Holland . . .	36	49	1	121	207	43
Belgium . . .	44	118	11	63	236	37
Switzerland . . .	20	41	1	35	97	32
Danub. States . . .	83	57	5	22	167	15
Greece . . .	14	10	1	4	29	13
Europe . . .	2,565	8,566	309	1,262	7,702	21
United States . . .	813	1,952	224	136	3,125	45
Canada . . .	57	98	26	24	205	39
Australia . . .	70	85	20	28	203	48
Argentina . . .	46	40	—	19	106	26
Total . . .	3,551	5,741	579	1,469	11,340	25

No. XXVII.—*Railways (1894).*

	Miles Open.	Millions.		Millions £.		Net Profit on Cap. £
		Passenger. Goods, Tons.	Capital.	Receipts.	Recips. on Cap. £	
United Kingdom	20,910	912	325	986	84	3·8
France	24,970	837	97	663	55	3·5
Germany	27,850	521	242	555	71	4·5
Russia	23,100	56	79	349	35	4·2
Austria	18,320	199	215	371	32	3·2
Italy	8,800	51	17	184	10	1·9
Scandinavia	8,060	33	18	54	5	2·6
Belgium	2,820	97	45	75	8	4·2
Holland	2,320	24	9	46	3	3·0
Switzerland	2,270	40	10	44	4	3·8
Other States	11,160	23	11	173	11	3·2
Europe	150,580	2,292	1,068	3,499	318	3·5
United States	180,000	541	638	2,260	223	3·2
Canada	16,000	14	21	186	10	1·6
Australia	13,620	91	12	139	9	3·0
Cape Colony	2,840	8	1	28	3	5·0
India	18,780	146	33	192	16	4·4
Spanish America	28,880	24	8	824	21	2·5
Various	9,480	19	9	117	10	3·0
The World	420,180	3,135	1,790	6,745	610	3·1

No. XXVIII.—*Traffic Returns of Railways.*

	£ Sterling per Mile.	No. Carried per Mile.				
		Capital.	Receipts.	Expenses.	Profit.	
United Kingdom	47,100	4,034	2,259	1,775	43,500	15,500
France	27,300	2,195	1,263	942	13,000	8,900
Germany	19,900	2,584	1,664	900	18,700	8,700
Russia	16,100	1,610	970	640	2,400	3,400
Austria	20,300	1,510	860	650	10,500	11,700
Italy	20,900	1,265	858	407	5,800	1,900
Sweden and Norway	6,000	530	340	190	3,300	2,100
Denmark	10,000	940	750	190	9,100	3,000
Holland	19,800	1,340	740	600	14,700	5,500
Belgium	26,500	2,566	1,467	1,099	34,300	16,000
Switzerland	19,400	1,867	1,107	750	17,600	4,400
Europe	23,200	2,120	1,310	810	15,100	7,100
United States	12,500	1,270	867	403	3,000	3,600
Canada	11,600	610	428	182	900	1,350
Australia	10,200	798	497	301	6,700	900
Cape Colony	9,700	1,150	670	480	2,900	350
India	10,200	850	400	450	7,700	1,800
The World	16,000	1,450	956	495	7,400	4,200

No. XXIX.—Growth of Railways.

	Miles Open.			Capital, Millions £.			£ per Inhab. (1894).
	1850.	1870.	1894.	1850.	1870.	1894.	
United Kingdom	6,620	15,640	20,910	240	530	985	26
France	1,890	9,770	24,970	57	274	663	17
Germany	3,640	11,730	27,850	61	204	555	11
Russia	310	7,100	23,100	5	119	349	3
Austria	960	5,950	18,320	20	120	371	9
Italy	270	8,830	8,800	5	75	184	6
Spain	80	3,200	6,710	1	51	108	6
Scandinavia	20	1,730	8,060	—	13	54	6
Belgium	560	1,800	2,820	18	48	75	12
Other States	130	2,650	9,040	2	47	155	6
Europe	14,470	63,300	150,580	404	1,476	3,499	10
United States	9,020	53,400	180,000	60	497	2,260	32
Colonies, &c.	60	11,540	89,600	1	124	986	—
Total	23,550	128,240	420,180	465	2,097	6,745	—

No. XXX.—Growth of Shipping.

Flag.	Tons Register.		Carrying-Power.	
	1842.	1894.	1842.	1894.
British	2,570,000	8,960,000	2,860,000	26,870,000
United States	2,180,000	4,680,000	2,770,000	11,250,000
French	630,000	890,000	660,000	2,360,000
German	550,000	1,560,000	580,000	4,220,000
Italian	460,000	730,000	490,000	1,410,000
Spanish	280,000	680,000	290,000	2,120,000
Scandinavian	620,000	2,380,000	630,000	4,060,000
Various	2,090,000	2,965,000	2,200,000	6,320,000
Total	9,380,000	22,885,000	10,480,000	58,610,000

No. XXXI.—Shipping in 1894.

Flag.	Tons Register.			Tons Carrying Power.
	Steam.	Sail.	Total.	
British	5,970,000	2,990,000	8,960,000	26,870,000
German	890,000	660,000	1,550,000	4,220,000
French	490,000	400,000	890,000	2,360,000
Norwegian	240,000	1,260,000	1,500,000	2,220,000
Spanish	480,000	200,000	680,000	2,120,000
Russian	240,000	510,000	750,000	1,470,000
Italian	210,000	570,000	780,000	1,410,000
Swedish	180,000	370,000	550,000	1,090,000
Greek	135,000	340,000	475,000	890,000
Dutch	180,000	110,000	290,000	830,000
Danish	140,000	190,000	330,000	750,000
Austrian	130,000	120,000	250,000	640,000
European	9,285,000	7,720,000	17,005,000	44,860,000
United States	2,190,000	2,490,000	4,680,000	11,250,000
Canadian	250,000	580,000	830,000	1,580,000
Australian	180,000	190,000	370,000	920,000
Total	11,905,000	10,980,000	22,885,000	58,610,000

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No. XXXII.—Money of all Nations.

	Millions £ Sterling.			Gold Ratio. Per Cent.
	Gold.	Silver.	Paper.	Total
United Kingdom . . .	85	24	41	150
France . . .	187	140	139	466
Germany . . .	182	45	61	238
Russia . . .	92	10	189*	291
Austria . . .	26	26	68	119
Italy . . .	20	7	65*	92
Spain and Portugal . . .	9	85	47	91
Scandinavia . . .	7	3	13	23
Holland . . .	6	12	17	35
Belgium . . .	12	10	18	40
Other States . . .	8	8	13	29
Europe . . .	584	319	671	1,574
United States . . .	130	131	243	504
Canada . . .	4	1	8	13
Australia . . .	29	1	4	34
The East . . .	56	206	41	302
Other States . . .	18	51	110	179
Total . . .	821	708	1,077	2,606
				81

The above is exclusive of South American "shin-plasters" (£170,000,000).

* Inconvertible notes, i.e. dishonest money.

No. XXXIII.—Earnings.

	Millions £ Yearly.						
	Agricul- ture.	Manufac- tures, &c.	Com- merce.	House- rent.	Profes- sions, &c.	Total.	£ per Inhab.
United Kingdom . . .	138	525	330	150	280	1,423	36·0
France . . .	250	333	246	118	252	1,199	31·2
Germany . . .	250	393	277	92	272	1,284	24·7
Russia . . .	324	244	211	47	178	1,004	9·5
Austria . . .	192	192	149	87	137	707	16·7
Italy . . .	122	103	92	27	92	436	14·0
Spain . . .	81	68	61	14	49	273	15·5
Portugal . . .	16	16	14	4	14	64	13·6
Sweden and Norway . . .	28	50	33	8	23	142	20·6
Denmark . . .	21	11	14	4	10	60	27·3
Holland . . .	22	26	43	10	23	124	25·8
Belgium . . .	26	70	49	8	28	181	28·3
Switzerland . . .	12	21	20	5	12	70	23·3
Danub. States . . .	50	33	32	7	25	147	12·9
Greece . . .	8	6	6	2	6	28	12·5
Europe . . .	1,540	2,091	1,577	533	1,401	7,142	19·3
United States . . .	488	1,200	640	267	521	3,116	44·0
Canada . . .	34	75	41	7	26	183	36·0
Australia . . .	42	62	41	21	49	215	51·2
Argentina . . .	28	20	21	7	19	95	24·0
Total . . .	2,132	3,448	2,320	835	2,016	10,751	23·0

The second column includes manufacturing, mining, forestry and fisheries; the third comprises trade and transport earnings; the fifth domestic wages, professional earnings and public salaries.

No. XXXIV.—*Wealth (1895).*

	Farms.	Rail- ways.	Houses.	Millions £ Sterling.			Total.
				Merchan- dise.	Sundries.		
United Kingdom . . .	2,077	985	2,490	805	5,449	11,806	
France . . .	3,093	663	2,159	601	3,174	9,690	
Germany . . .	2,508	555	1,755	677	2,557	8,052	
Russia . . .	2,710	849	1,019	515	1,832	6,425	
Austria . . .	1,797	371	719	367	1,258	4,512	
Italy . . .	1,399	184	503	223	851	3,160	
Spain . . .	1,212	108	280	148	682	2,380	
Portugal . . .	164	23	77	32	115	411	
Sweden and Norway . . .	278	40	152	80	240	790	
Denmark . . .	254	14	69	37	132	506	
Holland . . .	295	46	178	104	267	890	
Belgium . . .	364	75	175	118	266	988	
Switzerland . . .	172	44	91	49	136	492	
Danub. States . . .	508	36	136	83	263	1,026	
Greece . . .	109	6	81	15	61	222	
Europe . . .	16,930	3,499	9,834	3,854	17,223	51,340	
United States . . .	4,142	2,260	4,446	1,563	3,939	16,350	
Canada . . .	305	186	145	103	264	1,003	
Australia . . .	392	139	174	88	283	1,076	
Argentina . . .	198	88	107	68	170	616	
Total . . .	21,967	6,172	14,706	5,661	21,879	70,385	

No. XXXV.—*Wealth per Inhabitant.*

	£ Sterling per Inhabitant.					Percentage.	
	Rural.	Urban.	Real.	Personal.	Total.	Real.	Personal.
United Kingdom . . .	53	249	106	196	302	35·4	64·6
France . . .	80	172	123	129	252	48·8	51·2
Germany . . .	48	108	72	84	156	46·3	53·7
Russia . . .	26	35	30	31	61	48·8	51·2
Austria . . .	41	63	51	53	104	48·6	51·4
Italy . . .	45	56	53	48	101	53·2	46·8
Spain . . .	69	66	76	59	135	56·1	43·9
Portugal . . .	35	52	46	41	87	52·4	47·6
Sweden and Norway . . .	40	74	53	61	114	46·0	54·0
Denmark . . .	115	115	124	106	230	54·1	45·9
Holland . . .	61	122	87	96	183	47·5	52·5
Belgium . . .	56	98	75	79	154	48·1	51·9
Switzerland . . .	57	107	76	88	164	46·5	53·5
Danub. States . . .	44	46	49	41	90	54·1	45·9
Greece . . .	50	51	57	44	101	56·3	43·7
Europe . . .	45	94	64	75	139	46·0	54·0
United States . . .	59	175	111	123	234	47·3	52·7
Canada . . .	60	136	73	123	196	37·4	62·6
Australia . . .	93	163	97	159	256	38·1	61·9
Argentina . . .	49	105	58	96	154	38·4	61·6
General Average . . .	48	107	71	84	155	46·0	54·0

No. XXXVI.—*Public Debts.*

Millions £ Sterling.

	National.	Local.	Total.	Real Debt.	£ per Inhab.
United Kingdom . . .	629	230	859	859	22
France . . .	1,220	180	1,400	1,370	36
Germany . . .	604	—	604	117	2
Russia . . .	703	—	703	495	5
Austria . . .	555	—	555	324	8
Italy . . .	505	48	553	423	14
Spain . . .	293	—	293	293	16
Portugal . . .	148	—	148	133	28
Sweden and Norway . . .	26	10	36	12	2
Denmark . . .	11	—	11	1	—
Holland . . .	92	20	112	90	19
Belgium . . .	88	—	88	80	5
Switzerland . . .	13	—	13	13	4
Danub. States . . .	67	—	67	33	3
Greece . . .	33	1	34	33	15
Europe . . .	4,986	489	5,475	4,226	12
United States . . .	188	237	425	425	6
Canada . . .	64	5	69	57	13
Australia . . .	210	30	240	107	26
Total . . .	5,448	761	6,209	4,815	11

Where blanks occur the amount of municipal debt is unknown. Real debt is that which remains after deducting value of State railways.

No. XXXVII.—*Debt, Wealth, Taxes and Earnings per Head.*

£ per Inhabitant.

	Wealth.	Debt.	Net. Wealth.	Earnings.	Taxes.	Net Earnings.
United Kingdom . . .	302	22	280	36·0	3·1	32·9
France . . .	252	36	216	31·2	3·7	27·5
Germany . . .	156	12	144	24·7	2·5	22·2
Russia . . .	61	7	54	9·5	1·0	8·5
Austria . . .	104	13	91	16·7	2·0	14·7
Italy . . .	101	18	83	14·0	2·7	11·3
Spain . . .	135	16	119	15·6	1·7	13·8
Portugal . . .	87	81	56	13·6	1·8	11·8
Sweden and Norway . . .	114	5	109	20·6	1·5	19·1
Denmark . . .	230	5	225	27·3	2·2	25·1
Holland . . .	183	23	160	25·8	3·3	22·5
Belgium . . .	154	14	140	28·3	2·1	26·2
Switzerland . . .	164	4	160	23·3	1·8	21·5
Danub. States . . .	90	6	84	12·9	1·3	11·6
Greece . . .	101	15	86	12·3	1·8	10·5
Europe . . .	139	15	124	19·3	2·1	17·2
United States . . .	234	6	228	44·0	2·5	41·5
Canada . . .	196	14	182	36·0	1·6	34·4
Australia . . .	256	57	199	51·2	2·5	48·7
General Average . . .	155	14	141	23·6	2·2	21·4

Debt ratio includes national and local, without any deduction for State railways or other assets. Taxes include all, national and local, but not the proceeds of Crown lands, post office, or State railways.

APPENDIX

Population.—The birth and death rates for five years, 1888–92, gave the following averages per thousand inhabitants yearly:—

	Births.	Deaths.		Births.	Deaths.
England . .	30·7	19·5	Austria . .	39·4	29·7
Scotland . .	30·9	19·7	Italy . .	37·3	26·5
Ireland . .	22·7	19·1	Spain . .	29·6	25·4
France . .	22·5	22·2	Sweden . .	27·7	16·7
Germany . .	37·8	25·2	Holland . .	33·0	20·2
Russia . .	45·0	31·0	Belgium . .	30·0	21·2

Russia and Austria have the highest rates both for births and deaths, while France and Ireland stand lowest for births, Sweden and Ireland for deaths. The number of legitimate children born to 100 marriages in 1888–92 was:—

Russia . .	531	Holland . .	457	Germany . .	420	Belgium . .	369
Ireland . .	492	Italy . .	451	England . .	389	France . .	284

If we compare the total number of births with that of marriages at two periods we find:—

Births per 100 Marriages.

	1880–82.	1888–92.		1880–82.	1888–92.
England . .	407	406	Italy . .	440	489
France . .	304	310	Holland . .	422	472
Germany . .	439	456	Belgium . .	408	405
Austria . .	419	486	Sweden . .	414	474
Hungary . .	404	484	Denmark . .	380	446

England and Belgium show a decline, all the others a rising ratio.

The proportions of married and unmarried persons, per thousand inhabitants, are shown as follows (single including widowed):—

	Single.	Married.		Single.	Married.
England . .	663	387	U. States . .	644	366
Scotland . .	703	297	France . .	598	402
Ireland . .	736	264	Italy . .	648	352
Prussia . .	660	340	Belgium . .	683	317
Scandinavia . .	670	330	Spain . .	640	360

The working-age being taken as from fifteen to sixty years we may divide population into workers and non-workers thus, per 1000 inhabitants :—

	Workers.	Non- workers.		Workers.	Non- workers.
France . . .	608	392	United States . . .	575	425
Sweden . . .	597	403	Belgium . . .	566	434
Italy . . .	595	405	Germany . . .	564	436
Austria . . .	584	416	United Kingdom	557	448

The number of females to 1000 males in various countries is—

England . . .	1,064	France . . .	1,014	Austria . . .	1,032	U. States . . .	953
Scotland . . .	1,072	Germany . . .	1,038	Italy . . .	995	Canada . . .	965
Ireland . . .	1,028	Russia . . .	1,012	Belgium . . .	1,006	Australia . . .	866

Steam.—"Steam-power enables 1 man to do as much work as 120 in the last century. 1 bushel of coal, value 3 pence, will raise 20,000 gallons of water from a depth of 350 feet in a few minutes, which would take 20 men 10 hours to raise with a pump, at a cost of 40 shillings. Steam does for £1 what would cost £160 by hand."—*Quart. Review.*

Grain.—The production of grain has increased 31 per cent. in the last twenty years, as appears when we compare the average crops of the world for 1892–95 with Neumann Spallart's table for the decade 1871–80 :—

	Tons of Grain Yearly.		
	1871–80.	1892–95.	
Wheat	48,600,000	50,300,000	
Barley	19,400,000	41,300,000	
Oats	46,700,000	61,500,000	
Maize	38,400,000	55,500,000	
Rye	39,200,000	42,600,000	
Total	192,300,000	251,200,000	

Exports of Wheat.—The annual shipments averaged as follows, in tons :—

From	1876–80.	1881–90.	1891–95.
United States . . .	2,910,000	3,120,000	4,470,000
Russia	1,820,000	2,250,000	2,000,000
River Plate . . .	30,000	140,000	1,040,000
India	180,000	850,000	800,000
Roumania	430,000	525,000	730,000
Canada	110,000	115,000	240,000
Austria	290,000	380,000	150,000
Total	5,770,000	7,380,000	9,430,000

APPENDIX

Cattle.—The live-stock of Europe, as given by Malchus, in 1826 was as follows (000's omitted):—

	Horses.	Cattle.	Sheep.	Pigs.
United Kingdom . . .	1,900	10,500	44,100	5,300
France . . .	2,550	6,700	35,200	4,000
Germany . . .	2,440	9,970	17,300	4,500
Russia . . .	12,000	19,000	36,000	15,800
Austria . . .	1,900	9,900	12,000	5,500
Italy . . .	1,600	3,500	6,500	2,500
Spain . . .	1,600	2,500	13,000	1,000
Portugal . . .	540	650	1,200	700
Scandinavia . . .	1,250	4,200	3,500	1,550
Low Countries . . .	570	2,500	1,200	1,400
Switzerland . . .	100	800	500	250
Europe . . .	26,400	70,300	170,600	43,000

Wool-clip.—The world's clip is now nearly 1,100,000 tons, as compared with 270,000 tons in 1826. The annual production in 1893-95 and its equivalent in washed wool were:—

Tons.	Washed.	Tons.	Washed.
Europe . . .	351,000=211,000	Australia . . .	805,000=168,000
United States . . .	135,000=101,000	Cape Colony . . .	43,000= 32,000
River Plate . . .	154,000= 53,000	The East, &c.. . .	98,000= 59,000

making up 1,086,000 unwashed, or 624,000 tons washed.

Production of Fibre.—For the whole world see p. 30. The production in Europe is as follows, in tons:—

	Wool.	Flax, &c.	Total.
United Kingdom . . .	66,000	14,000	80,000
France . . .	87,000	53,000	90,000
Germany . . .	25,000	55,000	80,000
Russia . . .	106,000	474,000	580,000
Austria . . .	25,000	115,000	140,000
Other States . . .	92,000	43,000	135,000
Europe . . .	351,000	754,000	1,105,000

Cotton.—According to Ellison the consumption was:—

	Tons Yearly.		
	1867-72.	1879-84.	1894.
Great Britain . . .	473,000	618,000	730,000
Continent . . .	310,000	542,000	852,000
United States . . .	183,000	377,000	505,000
India . . .	...	53,000	203,000
Total . . .	966,000	1,590,000	2,290,000

Iron and Steel.—Bessemer's and like inventions have had the effect of producing steel at one-eighth of the previous cost: steel plates fell from £40 a ton in 1860 to £5 in 1894, and steel rails are now at 70 shillings a ton, as compared with £11 in 1870. So late as 1870 the question of iron *versus* wooden ships was debated at the Iron and Steel Institute, but so rapidly did iron assert itself that in 1879 the new vessels launched in the United Kingdom were 88 per cent. iron, 12 per cent. wooden. In 1893 the proportion was 96 per cent. steel, 4 per cent. of iron or wood.

Freight.—The ordinary cost of sending a ton of goods 100 miles is: by sea 6 pence, by canal 2 shillings, by railway 8 shillings, by highroad 30 shillings. Railway rates per ton 100 miles are approximately as follows:—

	Pence.		Pence.		Pence.		Pence.
U. States .	42	|	Germany .	80	|	G. Britain	88
Belgium .	80	|	France .	85	|	Austria .	100

At a meeting of the Royal Statistical Society, London, on June 16th, 1896, Mr. Price Williams showed tables to the effect that the London and North-Western Railway tariff averaged 88 pence a ton per 100 miles for merchandise, and 42 pence for minerals. Sir C. Boyle and Mr. Jeans considered that the ordinary goods charges by rail were much higher. If we adopt the above figures of Mr. Price Williams it follows that the mean haulage in Great Britain is 55 miles, and the *daily* goods traffic of the United Kingdom 50,000,000 ton-miles, i.e., half a million tons carried 100 miles. There has been a notable reduction of freight charges by land and water in the last twenty years: the freight on a ton of grain from Chicago to Liverpool is now 16 shillings, as compared with 67 shillings in 1873. The average goods tariff by rail in the United States for carrying a ton 100 miles has been as follows:—

Year.	Pence.	Year.	Pence.
1870	141	1885	53
1880	68	1893	42

Water-freight is much cheaper, averaging 12 pence per ton on the Mississippi for 100 miles.

Railways.—Working expenses take the following percentage of gross receipts :—

U. Kingdom . . .	56·5	Belgium . . .	57·2	Germany . . .	65·0	U. States . . .	70·5
France . . .	56·1	Australia . . .	62·3	Italy . . .	68·0	Canada . . .	70·6

The journey between London and Edinburgh, which usually took 17 days in the early years of the reign of George III., is now accomplished by express trains in 8½ hours.

Wealth.—Varigny estimates that there are (1880) about 700 persons in the world whose fortunes exceed 1 million pounds each, viz., Great Britain 200, United States 100, Germany and Austria 100, France 75, Russia 50, India 50, other countries 125. The *New York Tribune* in 1893 published a list of 4107 persons in the United States with fortunes ranging from £200,000 upwards. It appears from the Probate Court returns (1889–93) that there are in the United Kingdom 24,000 persons with fortunes over £100,000. In 1894 the London papers published a summary for seven years, showing that 437 persons engaged in trade had died in England leaving more than £50,000 each, viz. :—

Class.	Number.	Fortune, £.	Average, £.
Bankers and brewers . . .	250	59,100,000	236,000
Merchants	187	15,100,000	80,000
Total	437	74,200,000	170,000

Taxes.—In 1881 Guyot estimated the taxes per inhabitant as follows :—

	Pence per Inhab.			Pence per Inhab.			
	Direct.	Indirect.	Total	Direct.	Indirect.	Total	
U. Kingdom	86	394	480	Portugal . . .	60	156	216
France . . .	102	534	636	Russia . . .	37	107	144
Prussia . . .	78	138	216	Sweden . . .	80	104	184
Austria . . .	98	310	408	Denmark . . .	58	182	240
Hungary . . .	180	142	272	Holland . . .	120	340	460
Italy . . .	152	280	432	Belgium . . .	120	280	400
Spain . . .	152	280	432	Switzerland	55	98	153

Price-Level for 101 Years.—In the following price-levels the prices of 1895 are taken as par, with which to compare those of former years. It appears that £1000 in 1895 would buy as much as £1400 in 1880:—

Retrospective Price-Level of Ten Articles.

	1895.	1800.	1880.	1870.	1860.	1850.	1840.	1830.	1820.	1810.	1794.
Beef . .	100	109	124	120	109	86	99	73	94	97	78
Butter . .	100	107	133	107	110	69	89	80	83	89	70
Coffee . .	100	108	89	63	60	66	86	41	108	82	80
Copper . .	100	126	146	160	225	184	216	190	256	309	233
Iron . .	100	120	128	118	150	144	363	217	336	280	262
Silk . .	100	140	150	226	306	156	218	120	192	314	148
Sugar . .	100	126	208	230	242	199	343	165	259	304	367
Tallow . .	100	90	110	137	176	117	164	110	173	202	139
Timber . .	100	114	128	164	159	159	268	103	138	411	128
Wheat . .	100	140	184	198	228	171	282	272	294	463	222
Total . .	1,000	1,180	1,400	1,523	1,765	1,351	2,128	1,371	1,933	2,580	1,717

Aggregate Price-Level of Twenty Articles.

Year.	Level.	Year.	Level.	Year.	Level.	Year.	Level.
1895 . .	2,000	1870 . .	3,248	1845 . .	3,228	1820 . .	4,096
1890-94 . .	2,275	1865-69 . .	3,447	1840-44 . .	3,603	1815-19 . .	4,400
1890 . .	2,422	1865 . .	3,525	1840 . .	4,150	1815 . .	4,210
1885-89 . .	2,350	1860-64 . .	3,590	1835-39 . .	3,624	1810-14 . .	4,904
1885 . .	2,364	1860 . .	3,532	1835 . .	3,382	1810 . .	5,050
1880-84 . .	2,710	1855-59 . .	3,658	1830-34 . .	3,820	1805-09 . .	5,210
1880 . .	2,810	1855 . .	3,780	1830 . .	3,260	1805 . .	4,707
1875-79 . .	2,960	1850-54 . .	3,060	1825-29 . .	3,608	1800-04 . .	4,922
1875 . .	3,102	1850 . .	2,737	1825 . .	4,000	1800 . .	5,695
1870-74 . .	3,310	1845-49 . .	3,218	1820-24 . .	3,728	1794 . .	4,110

Sauerbeck's Price-Level (Forty-five Articles).

	1895.	1888-94.	1878-87.	1867-77.	1858-66.	1848-57.	1838-47.	1828-37.	1818-27.
Grain . .	1,000	1,192	1,463	1,852	1,933	1,648	1,839	1,839	2,056
Meat, &c. .	1,000	1,066	1,218	1,282	1,141	1,018	1,026	1,000	1,154
Sugar, &c. .	1,000	1,133	1,226	1,613	1,613	1,403	1,968	2,048	2,436
Minerals . .	1,000	1,180	1,177	1,613	1,516	1,500	1,500	1,565	2,065
Textiles . .	1,000	1,175	1,365	1,923	2,250	1,588	1,576	1,808	2,020
Sundries . .	1,000	1,030	1,246	1,538	1,584	1,446	1,430	1,415	1,630
Index No. .	1,000	1,118	1,274	1,613	1,597	1,436	1,500	1,500	1,790

By textiles is meant not manufactured goods, but raw fibre.

APPENDIX

Production of Gold since 1850.

Year.	U. States.	Australia.	Russia.	Various.	Total.	Equiv. Tons of Gold
1851 .	11,800	1,400	3,600	2,200	18,800	134
1852 .	12,700	12,200	3,600	2,200	30,700	220
1853 .	13,700	13,000	3,400	2,200	32,300	231
1854 .	12,700	9,800	3,400	2,200	27,900	199
1855 .	11,600	12,000	3,500	2,200	29,300	209
1856 .	11,800	13,200	3,500	2,300	30,600	219
1857 .	11,500	11,600	3,900	2,300	29,300	209
1858 .	10,600	12,100	3,900	2,300	28,900	206
1859 .	10,500	12,200	3,600	2,300	28,600	204
1860 .	9,800	11,200	3,600	2,300	26,900	192
1861 .	9,000	11,000	3,500	2,400	25,900	185
1862 .	8,200	11,300	3,500	2,400	25,400	181
1863 .	8,400	11,400	3,800	2,400	25,500	182
1864 .	9,700	10,000	3,400	2,400	25,500	182
1865 .	11,200	10,300	3,400	2,400	27,300	195
1866 .	11,200	10,400	4,100	2,300	28,000	200
1867 .	10,900	9,900	4,100	2,300	27,200	194
1868 .	10,100	10,400	4,200	2,300	27,000	193
1869 .	10,400	9,700	4,300	2,300	26,700	191
1870 .	10,400	8,500	4,300	2,300	25,500	182
1871 .	9,700	9,900	4,400	2,500	26,500	189
1872 .	8,200	9,000	4,700	2,600	24,500	175
1873 .	8,200	8,400	4,800	2,700	24,100	172
1874 .	7,700	7,200	4,800	2,800	22,500	161
1875 .	7,700	6,900	4,800	3,000	22,400	160
1876 .	8,400	6,900	4,700	3,200	23,200	166
1877 .	8,900	6,300	5,700	3,200	25,100	179
1878 .	10,700	6,100	5,900	3,300	26,000	186
1879 .	8,200	6,100	5,900	3,200	23,400	167
1880 .	7,600	6,300	5,700	3,300	22,900	163
1881 .	7,300	6,400	4,700	4,000	22,400	160
1882 .	6,900	6,200	4,600	3,800	21,500	154
1883 .	6,300	5,600	4,600	4,300	20,800	149
1884 .	6,500	6,000	4,600	4,700	21,800	156
1885 .	6,700	5,800	4,200	5,100	21,800	156
1886 .	7,400	5,600	4,200	5,200	22,400	160
1887 .	7,000	5,800	4,200	5,100	22,100	158
1888 .	7,000	6,000	4,500	5,500	23,000	164
1889 .	6,900	7,000	4,900	5,800	24,600	176
1890 .	6,900	6,400	4,700	6,800	24,800	177
1891 .	6,600	6,800	4,700	7,500	25,400	181
1892 .	6,400	7,200	4,800	9,200	27,600	197
1893 .	7,100	7,500	4,800	11,900	31,300	223
1894 .	8,200	8,700	5,700	15,100	37,700	270
44 years		399,800	375,300	190,700	170,000	1,135,300
						8,107

APPENDIX

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Production of Silver since 1850.

Period.	Tons.					Value, £ Sterling.
	Mexico.	South America.	United States.	Various.	Total.	
1851-55 .	2,330	1,090	40	970	4,430	40,800,000
1856-60 .	2,240	950	30	1,800	4,520	41,100,000
1861-65 .	2,360	950	870	1,330	5,510	50,100,000
1866-70 .	2,600	1,150	1,510	1,440	6,700	60,300,000
1871-75 .	3,010	1,870	2,820	2,150	9,850	86,900,000
1876-80 .	3,280	1,750	4,900	2,820	12,250	95,800,000
1881-85 .	3,760	1,820	5,690	2,770	14,040	106,300,000
1886-90 .	4,730	2,100	7,640	8,180	17,650	117,000,000
1891-94 .	5,520	1,720	6,790	4,490	18,520	103,200,000
44 years	29,830	13,400	30,290	19,950	98,470	701,000,000

The value of silver, as stated above, is according to London market price in each period. The tables are Soetbeer's down to 1890, and from the Australian and United States Mint Reports since. The production of gold has now reached 280 tons, or £39,000,000 yearly, being 49 tons more than the greatest previous yield on record. The new gold-fields of the Rand, South Africa, first came into notice in 1888, and have since yielded £33,000,000, their annual product now reaching £8,000,000. The product of precious metals in forty-four years has been :—

Period.	Gold, Millions £.					Equivalent in Tons.
	U. States.	Australia.	Russia.	Various.	Total.	
1851-60 .	116·3	108·5	36·0	22·5	283·3	2,023
1861-70 .	99·5	102·9	38·1	23·5	264·0	1,885
1871-80 .	86·3	73·1	51·4	29·8	240·6	1,718
1881-90 .	68·9	60·8	45·2	50·3	225·2	1,610
1891-94 .	28·3	30·0	20·0	43·9	122·2	871
44 years	899·3	875·3	190·7	170·0	1,135·3	8,107

Silver, Millions £.

Period.	Silver, Millions £.				Tons.
	United States.	Spanish America.	Various.	Total.	
1851-60 .	. . 0·6	60·2	20·6	81·4	8,950
1861-70 .	. . 21·4	63·6	25·4	110·4	12,210
1871-80 .	. . 64·3	81·9	36·5	182·7	22,100
1881-90 .	. . 93·9	87·5	41·9	223·3	31,690
1891-94 .	. . 88·0	40·4	24·8	103·2	18,520
44 years .	218·2	338·6	149·2	701·0	93,470

The price of silver, and its relative value compared with gold have been :—

Years.	Pence per Oz.	Oz. to 1 Oz. Gold.	Years.	Pence per Oz.	Oz. to 1 Oz. Gold.
1841-50	. 60·5	15·5	1890	. 47·7	19·6
1851-60	. 61·5	15·2	1891	. 45·0	20·8
1861-70	. 60·8	15·4	1892	. 39·8	23·5
1871-75	. 59·2	15·8	1893	. 35·6	26·3
1876-80	. 52·5	17·8	1894	. 29·0	32·3
1881-90	. 47·6	19·6	1895	. 29·9	31·3

Sea-borne Specie.—The amounts sent over sea in thirty-four years were :—

Gold Imported, Millions £.					
Period.	G. Britain.	France.	U. States.	Various.	Total.
1861-70	. 171	189	31	121	512
1871-80	. 180	151	42	131	504
1881-94	. 241	153	99	245	738
34 years	. 592	493	172	497	1,754

Exported.					
1861-70	. 112	119	118	168	512
1871-80	. 172	90	74	168	504
1881-94	. 200	115	116	307	738
34 years	. 484	324	303	643	1,754

Silver Imported, Millions £.					
1861-70	. 93	92	12	277	474
1871-80	. 132	111	18	166	427
1881-94	. 129	101	43	163	436
34 years	. 354	304	73	606	1,337

Exported.					
1861-70	. 91	78	22	283	474
1871-80	. 119	48	73	187	427
1881-94	. 142	84	84	126	436
34 years	. 352	210	179	596	1,337

Period.	Total, Bullion Imports.					Total.
	G. Britain.	France.	U. States.	Various.		
1861-70 .	264	281	43	398	986	
1871-80 .	812	262	60	297	931	
1881-94 .	870	254	142	408	1,174	
34 years .	946	797	245	1,108	3,091	
Exports.						
1861-70 .	203	197	185	451	986	
1871-80 .	291	198	147	355	931	
1881-94 .	342	199	200	433	1,174	
34 years .	836	534	482	1,239	3,091	

UNITED KINGDOM

Population.—Between 1821 and 1894 the aggregate population of ten principal cities of the United Kingdom rose 270 per cent., while the rest of the population increased only 62 per cent. The cities showed as follows:—

	1821.	1861.	1894.
London .	1,275,000	2,804,000	4,350,000
Manchester .	184,000	441,000	726,000
Glasgow .	147,000	395,000	687,000
Liverpool .	119,000	444,000	613,000
Birmingham .	107,000	296,000	492,000
Leeds .	84,000	207,000	389,000
Sheffield .	42,000	185,000	388,000
Dublin .	227,000	305,000	362,000
Belfast .	87,000	121,000	274,000
Edinburgh .	138,000	202,000	271,000
10 cities .	2,310,000	5,400,000	8,502,000

Occupations.—The occupations of the people in 1891 were:—

	England.	Scotland.	Ireland.	U. Kingdom.
Agriculture .	1,837,000	249,000	941,000	2,527,000
Manufactures .	7,336,000	1,033,000	657,000	9,026,000
Trade .	1,400,000	181,000	95,000	1,676,000
Professions .	926,000	111,000	208,000	1,245,000
Domestics .	1,901,000	203,000	238,000	2,342,000
Total .	12,900,000	1,777,000	2,189,000	16,816,000

(“Manufactures” includes also mining.)

Steam-power.—This has grown six-fold since 1860, horse-power showing approximately as follows:—

Year.	Fixed.	Locomotives.	Steamboats.	Total
1860 . . .	700,000	1,100,000	350,000	2,150,000
1880 . . .	2,000,000	3,800,000	2,510,000	7,810,000
1895 . . .	2,200,000	4,800,000	5,740,000	12,740,000

The allotment among the three kingdoms, at page 61, is in this manner: fixed, according to the ratios of factory operatives; railway, according to gross earnings; steamboat, according to registered tonnage in each kingdom.

Agriculture.—The returns for 1895 showed the productive area, in acres, thus:—

	England.	Scotland.	Ireland.	U. Kingdom.
Wheat . . .	1,385,000	35,000	35,000	1,455,000
Barley . . .	1,960,000	215,000	170,000	2,345,000
Oats . . .	2,805,000	1,010,000	1,215,000	4,530,000
Rye, &c. . .	495,000	20,000	20,000	535,000
All grain . . .	6,145,000	1,280,000	1,440,000	8,865,000
Potatoes . . .	415,000	135,000	710,000	1,260,000
Turnips . . .	1,445,000	480,000	815,000	2,240,000
Vetches, &c. . .	750,000	25,000	125,000	900,000
Green crops . . .	2,610,000	640,000	1,150,000	4,400,000
Grasses . . .	3,200,000	1,575,000	1,285,000	6,060,000
Flax . . .	...	...	100,000	100,000
Fruit, &c. . .	595,000	15,000	15,000	625,000
Under crops . . .	12,550,000	3,510,000	8,990,000	20,050,000
Pasture . . .	15,255,000	1,385,000	11,190,000	27,830,000
Total cultivated .	27,805,000	4,895,000	15,180,000	47,880,000

The returns for 1896 show that the area under grain is 235,000 acres less than the above figures for 1895. The productive area is now 3,000,000 acres more than in McCulloch's time (1846), viz.:—

	1846.	1895.
England . . .	25,270,000	27,805,000
Scotland . . .	4,400,000	4,895,000
Ireland . . .	15,200,000	15,180,000
Total . . .	44,870,000	47,880,000

M'Culloch's estimate of rural products in 1846 was as follows:—

& Sterling (000's omitted).

	England.	Scotland.	Ireland.	U. Kingdom.
Grain . . .	51,800	9,700	15,500	77,000
Green crops . . .	28,700	5,800	7,800	41,600
Hay and straw . . .	13,000	2,400	8,600	19,000
Meat . . .	26,000	6,300	14,200	46,500
Dairy . . .	13,400	2,400	3,600	19,400
Sundries . . .	9,100	1,900	3,500	14,500
Total . . .	142,000	28,000	48,000	218,000

Caird's estimate for the United Kingdom in 1878 amounted to 261 millions sterling, including 87 for grain, 39 for sundries, and 135 millions for pastoral products.

Harris's estimate of crops and value of cattle in 1894 was:—

	£	No.	£
Wheat	8,510,000	Horses .	2,060,000
Oats	15,800,000	Cattle .	11,210,000
Barley, &c. . . .	18,840,000	Sheep .	31,770,000
Straw	12,230,000	Pigs .	3,280,000
Green crops	44,800,000	Asses .	...
Hay	33,520,000	Poultry. .	...
Total	128,700,000	Total	197,200,000

The value of products compared with the number of hands in 1846 and 1894 was as follows:—

	Hands.		Product, Millions £.		£ per Hand.	
	1846.	1894.	1846.	1894.	1846.	1894.
England . . .	1,760,000	1,387,000	142	147	81	110
Scotland . . .	299,000	249,000	28	28	93	112
Ireland . . .	1,460,000	941,000	48	55	33	58
U. Kingdom .	3,519,000	2,527,000	218	230	62	91

Estates and Farms.—There are 19,000 estates and over a million farms in the United Kingdom:—

	Estates, Number.		Farms, Number.		Acres per Farm.	
		Acres.		Acres.		Acres.
England . . .	10,070	22,010,000	453,000	27,880,000		60
Scotland . . .	2,710	18,160,000	80,000	4,890,000		60
Ireland . . .	6,495	17,720,000	515,000	15,110,000		30
U. Kingdom	19,275	57,890,000	1,048,000	47,880,000		46

The assessed rental compares with what it was fifty years ago thus :—

	1846, £.	1894, £.
England	40,200,000	40,060,000
Scotland	5,600,000	6,250,000
Ireland	8,630,000	9,890,000
United Kingdom . . .	54,430,000	56,200,000

The Land Commissioners in Ireland in the last fifteen years have cut down half the rents of the kingdom by 20 per cent., and left the other half unreformed. The following table shows the reformed and unreformed in each province in 1895 :—

	Reformed, £.		Valuation of Unre- formed, £.	Total, £.
	Old Rent.	Judicial.		
Ulster . . .	1,910,000	1,540,000	1,270,000	2,810,000
Leinster . . .	1,620,000	1,290,000	1,930,000	3,220,000
Connaught . . .	760,000	600,000	680,000	1,280,000
Munster . . .	1,690,000	1,310,000	1,610,000	2,920,000
Total . . .	5,980,000	4,740,000	5,490,000	10,230,000

The unreformed rents are known to be at least 10 per cent. over the above official (Griffith's) valuation. Hence the real land rental of Ireland is £10,800,000.

Land-taxes.—The taxes that fall on farmers have risen 70 per cent. since 1846, viz. :—

	1846.			
	England, £.	Scotland, £.	Ireland, £.	U. Kingdom, £.
Tithes . . .	3,010,000	...	...	8,010,000
Rates . . .	3,900,000	550,000	850,000	5,300,000
Income-tax . . .	1,200,000	200,000	...	1,400,000
Land-tax . . .	950,000	50,000	...	1,000,000
Stamps, &c. . .	1,100,000	150,000	250,000	1,500,000
Total . . .	10,160,000	950,000	1,100,000	12,210,000
1890.				
	England, £.	Scotland, £.	Ireland, £.	U. Kingdom, £.
Tithes . . .	4,050,000	...	...	4,050,000
Rates . . .	8,300,000	1,400,000	2,100,000	11,800,000
Income-tax . . .	1,200,000	200,000	250,000	1,650,000
Land-tax . . .	1,050,000	50,000	...	1,100,000
Stamps, &c. . .	1,600,000	250,000	350,000	2,200,000
Total . . .	16,200,000	1,900,000	2,700,000	20,800,000

Value of Land.—In April 1889 the *Times* published a record of all landed estates (over 30 acres) sold by auction at London, situate in England and Wales, from 1780 to 1880, which sum up thus:—

Period.	Acres.	Rental, £.	Price, £.	Rent per Acre, Shil.	Price per Acre, £.
1781-1800	72,000	76,000	2,430,000	21	33·8
1801-1820	136,000	152,000	4,920,000	22	36·2
1821-1840	246,000	221,000	5,830,000	18	23·7
1841-1860	189,000	261,000	6,880,000	28	36·4
1861-1870	122,000	153,000	5,250,000	25	43·0
1871-1880	109,000	163,000	5,590,000	30	51·3
100 years	874,000	1,026,000	30,900,000	23	35·1

Food-supply.—The importations of grain in thirty-five years have been:—

Tons (000's omitted).

Period.	Wheat.	Barley.	Oats.	Maisle, &c.	Total.
1861-70	18,000	3,500	3,800	7,500	32,800
1871-80	28,500	5,700	6,200	16,500	56,900
1881-90	38,500	7,800	7,000	18,200	71,500
1891-95	24,000	5,500	3,800	10,100	43,400
35 years	109,000	22,500	20,800	58,100	204,600

The consumption of wheat in the United Kingdom, per inhabitant, rose steadily till 1880, and has since declined, viz.:—

Pounds Wheat yearly per Head.

Period.	Native.	Imported.	Total.	Price, £ per Ton.
1831-50	255	32	287
1851-60	218	98	311
1861-70	201	134	335
1871-80	165	213	378
1881-90	120	260	380
1891-95	78	282	360

The production of grain and meat in forty-five years has been:—

Tons Yearly.

Pounds per Inhab.

Period.	Grain.	Meat.	Grain.	Meat.
1851-60	. . . . 9,750,000	950,000	780	79
1861-70	. . . . 9,700,000	1,040,000	720	77
1871-80	. . . . 8,500,000	1,050,000	570	71
1881-90	. . . . 7,820,000	1,080,000	470	65
1891-95	. . . . 7,580,000	1,100,000	440	63

Imports of meat from foreign countries have more than doubled in twenty years, the weight in tons being as follows :—

		1875.	1885.	1895.
Beef	100,000	182,000	258,000	
Mutton	56,000	86,000	227,000	
Bacon	145,000	222,000	292,000	
Lard	27,000	44,000	67,000	
Poultry . . . .	...	16,000	18,000
Total	<u>328,000</u>	<u>550,000</u>	<u>862,000</u>	

Beef and mutton include live cattle : oxen as 750 lbs., sheep 90 lbs., dead meat.

Cattle.—The live-stock of the United Kingdom has increased much since 1846, viz. :—

Year.	Horses.	Cattle.	Sheep.	Pigs.
1846 .	2,050,000	7,950,000	27,900,000	3,690,000
1896 .	2,110,000	10,900,000	30,800,000	4,280,000

The number of cows and sheep to 100 inhabitants in 1895 was :—

	England.	Scotland.	Ireland.	U. Kingdom.
Cattle	17	25	95	28
Sheep	67	140	90	75

The number and value of cattle shipped from Ireland to Great Britain in 1894 were :—

	Horses.	Cattle.	Sheep.	Pigs.	Total.
Number .	34,000	827,000	958,000	587,000	...
Value, £ .	340,000	8,270,000	1,440,000	1,170,000	11,220,000

Dairy.—There are 4,000,000 milch cows, which give an average of 350 gallons milk. The consumption is estimated thus, in millions of gallons :—

Used as	Howard.	Turnbull.	Bear.	Sheldon.	Mean.
Milk	570	595	570	616	588
Butter	564	450	616	540	542
Cheese	305	240	224	224	248
Total	<u>1,439</u>	<u>1,285</u>	<u>1,410</u>	<u>1,380</u>	<u>1,378</u>

The mean of the above estimates shows an annual production of 90,000 tons of butter and 110,000 of cheese : each ton of butter takes 6000 gallons of milk, and each of cheese 2300 gallons.

Canals.—A statement published in 1890 showed 3814 miles of navigable rivers and canals in the United Kingdom, of which the railway companies owned 1200 miles: total annual traffic, 34 million tons: estimated gross receipts, £1,700,000.

House-property.—The rental of London is £40,000,000, having quadrupled in half a century: it was only £9,600,000 in 1841. There are 700,000 houses and 2100 miles of streets. Building sites in 1886 showed a maximum price of £29 per square foot, equal to £1,260,000 per acre. The house-property of London represents a value of 670 millions sterling, or £160 per inhabitant, against £218 per head in Paris.

Textile Manufactures: 1851–1894.

	Value, Millions £ Sterling.				Total, 44 years.
	1851–60.	1861–70.	1871–80.	1881–94.	
<i>Cottons—</i>					
Make . . .	562	830	1,020	1,486	3,898
Export . . .	381	596	719	997	2,693
Home use . . .	181	234	301	489	1,205
<i>Woollens—</i>					
Make . . .	366	508	555	753	2,182
Export . . .	128	237	262	319	946
Home use . . .	238	271	293	434	1,236
<i>Silks—</i>					
Make . . .	173	146	108	113	540
Export . . .	7	10	11	8	36
Home use . . .	166	136	97	105	504
<i>Linens—</i>					
Make . . .	128	165	170	173	636
Export . . .	57	95	82	88	322
Home use . . .	71	70	88	85	314
<i>Jute and Hemp—</i>					
Make . . .	70	100	156	212	538
Export . . .	11	16	33	47	107
Home use . . .	59	84	123	165	431
Total make . . .	1,299	1,749	2,009	2,737	7,794
Export . . .	584	954	1,107	1,459	4,104
Home use . . .	715	795	902	1,278	3,690

(Silk exports were merely of yarn.)

Woollens.—In a report dated 1886, Sir J. Behrens, of Bradford, valued the output of British woollen goods at £60,400,000 per annum.

APPENDIX

Iron and Steel.—The output has been approximately as follows:—

Period.	Iron, Tons (000's omitted).			Steel, Tons (000's omitted).		
	Make.	Export.	Home.	Make.	Export.	Home.
1851-60.	32,500	12,200	20,500	900	200	700
1861-70.	47,400	18,700	28,700	1,700	350	1,350
1871-80.	65,500	24,200	41,300	8,300	3,800	4,500
1881-93.	102,400	34,700	67,700	36,000	14,600	21,400
43 years.	247,800	89,800	158,000	46,900	18,950	27,950

Great Britain made 248 million tons of iron in forty-three years, of which 90 millions were exported: of the remainder 111 millions were used in iron manufactures, and 47 millions converted into steel. As regards the latter 28 million tons were used for manufactures and 19 millions exported.

Copper, Lead, &c.—The output was approximately:—

Period.	Copper, Tons (000's omitted).			Lead, Tons (000's omitted).		
	Make.	Export.	Home.	Make.	Export.	Home.
1851-60.	. 590	260	330	790	250	540
1861-70.	. 910	460	450	1,070	390	680
1871-80.	. 930	560	870	1,410	380	1,030
1881-93.	. 1,760	810	950	2,150	580	1,570
43 years.	. 4,190	2,090	2,100	5,420	1,600	3,820
	Tin.			Zinc.		
1851-60.	. 90	20	70	200	30	170
1861-70.	. 130	40	90	220	60	160
1871-80.	. 180	60	120	310	60	250
1881-93.	. 280	70	210	830	110	720
43 years.	. 680	190	490	1,560	260	1,300

Leather.—The output, export, and home consumption of leather wares were approximately:—

Period.	Millions £ Sterling.		
	Make.	Export.	Home Use.
1851-60.	330	18 312
1861-70.	410	23 387
1871-80.	450	35 415
1881-93.	720	52 668
43 years.	1,910	128 1,782

Liquor.—The consumption of spirits and beer in the United Kingdom per inhabitant were :—

Gallons per Head.									
Year.	Spirits.	Beer.	Year.	Spirits.	Beer.	Year.	Spirits.	Beer.	
1853 .	1·10	27·1	1870 .	1·01	32·8	1890 .	1·02	30·0	
1860 .	0·93	25·8	1880 .	1·09	27·8	1895 .	1·00	29·7	

As regards the consumption of spirits in the three kingdoms official returns distinguish only what is home-made : if we allot what is imported in the ratio of tonnage entries the total consumption in 1895 will appear as follows :—

	Home-made.	Imported.	Total.	Per Head.
England .	20,400,000	6,400,000	26,800,000	0·88
Scotland .	6,500,000	1,000,000	7,500,000	1·80
Ireland .	4,200,000	600,000	4,800,000	1·05
U. Kingdom .	31,100,000	8,000,000	39,100,000	1·00

Newspapers.—“Sell's Press Directory” gives London circulation as 4,800,000 daily. The consumption of printing-paper (after deducting for books) indicates that the circulation of the three kingdoms, between dailies and weeklies, is about 42,000,000 weekly. In 1841 no daily paper was published in England outside London. The present circulation, say 174,000,000 papers monthly, is distributed at page 82 among the three kingdoms according to the ratio of letters passing through the Post Office.

Shipping.—The ownership of vessels in 1894 was as follows, in tonnage :—

	Steam.	Sail.	Total.	Carrying-power.	Tons per 100 Inhab.
England .	4,510,000	1,920,000	6,430,000	19,960,000	66
Scotland .	1,330,000	930,000	2,260,000	6,250,000	151
Ireland .	130,000	140,000	270,000	660,000	15
U. Kingdom	5,970,000	2,990,000	8,960,000	26,870,000	69

Tonnage entries in 1894 were as follows :—

	Sea-going.	Coastwise.	Total.	Tons per 100 Inhab.
England .	35,200,000	40,300,000	75,500,000	250
Scotland .	3,800,000	8,600,000	12,300,000	295
Ireland .	800,000	6,600,000	7,400,000	163
U. Kingdom .	39,800,000	55,400,000	95,200,000	240

APPENDIX

Wealth.—Colquhoun's estimates in 1812 and Pebrer's in 1833 were, in millions £ sterling, thus:—

	England.		Scotland.		Ireland.		U. Kingdom.	
	1812	1833.	1812.	1833.	1812	1833.	1812	1833.
Land . .	833	1,000	166	200	333	400	1,332	1,600
Cattle . .	113	150	20	26	50	66	183	242
Houses . .	300	400	30	40	70	98	400	533
Furniture . .	180	173	20	20	50	53	250	246
Sundries . .	451	748	50	87	71	138	572	973
Total . .	1,877	2,471	286	373	574	750	2,737	3,594

Porter's estimate in 1840 was 4100 millions, Giffen's in 1885 was 10,037 millions. The ratios per inhabitant come out thus:—

Year.	Millions £.	Population.	£ per Inhab.
1812 . . .	2,737	18,200,000	150
1840 . . .	4,100	26,600,000	154
1860 . . .	7,206	28,900,000	249
1885 . . .	10,037	36,000,000	278
1895 . . .	11,806	39,100,000	302

Savings-banks.—The ratio of depositors to population has quintupled since 1850:—

Year.	Depositors.	Population.	Depos. per 1000.
1850 . . .	1,060,000	27,400,000	39
1893 . . .	7,220,000	38,400,000	188

Local Expenditure.—This has doubled since 1868, viz.:—

	1868, £.	1892, £.		1868, £.	1892, £.
Poor relief	9,200,000	10,900,000	England .	30,400,000	63,300,000
Schools . . .	...	8,200,000	Scotland .	2,600,000	8,200,000
Police, &c.	26,900,000	56,900,000	Ireland .	3,100,000	4,500,000
Total . .	36,100,000	76,000,000	Total . .	36,100,000	76,000,000

The Local Debt of England and Wales in 1894 reached £224,200,000.

Debt of Ireland.—Official returns show the debt at the following dates:—

1784 . . .	£2,180,000	|	1801 . . .	£26,840,000
1790 . . .	2,400,000	|	1817 . . .	118,500,000

There was a rapid increase from 1798 to 1801, being the expenses of putting down the rebellion and paying those peers

who consented to vote for the Union. After the Union the handling of the finances was flagitious. The Irish Treasury was suppressed in 1817.

Ratios of the Three Kingdoms.

	England.	Scotland.	Ireland.	U. Kingdom.
Population . . .	77·7	10·5	11·8	100·0
Post-office . . .	85·0	9·0	6·0	100·0
Railways receipts . . .	85·3	10·7	4·0	100·0
Agriculture . . .	63·9	12·2	23·9	100·0
Manufactures . . .	80·2	15·5	4·3	100·0
Wealth . . .	85·2	9·3	5·5	100·0

FRANCE

Agriculture.—The crops of potatoes and beetroot have been as follows, in tons :—

	1840.	1860.	1894.
Potatoes . . .	5,300,000	6,400,000	12,800,000
Beetroot . . .	800,000	3,000,000	18,400,000

Levasseur estimated all farm products at 268 millions sterling in 1830, and 368 in 1869. France has 5,020,000 milch cows, which average 325 gallons of milk, against 340 in Great Britain. The production of butter is 110,000 tons yearly. The dairy output is valued at £46,000,000, besides £12,700,000 for fowls and eggs, and £800,000 for honey. De Foville and some others count manure as an agricultural product, worth 35 to 40 millions sterling, the quantity being usually estimated at 84 million tons, but De Foville, who is a good authority, maintains 100 million tons.

Land-value.—Land trebled in value between Chaptal's estimate of 1817 and the year 1879, but it has since fallen one-third :—

	Area, Acres.		Value, Millions £.			£ per Acre.	
	1817.	1895.	1817.	1879.	1895.	1817.	1895.
Arable . . .	57,000,000	46,600,000	548	2,301	1,398	10	30
Meadow . . .	8,700,000	15,900,000	279	745	700	32	44
Vineyards . . .	6,800,000	4,400,000	196	312	185	29	42
Forest . . .	22,100,000	20,700,000	131	250	248	6	12
Pasture, &c. . .	19,000,000	22,940,000	44	56	49	2	2
Total . . .	113,600,000	110,540,000	1,198	3,664	2,580	10	23

APPENDIX

Land-tenure.—The report for 1883 compares with that for 1815 as follows:—

Class.	No. of Estates.		Acres (000's omitted).		Acres to each.	
	1815.	1883.	1815.	1883.	1815.	1883.
Large . . .	191,000	142,000	73,700	41,700	390	294
Medium . . .	474,000	1,496,000	19,500	49,500	41	33
Small . . .	2,038,000	1,865,000	17,300	9,300	8	5
Total . . .	2,703,000	3,503,000	110,500	100,500	41	29

Medium-sized estates, average 33 acres, now cover one-half of France, whereas in 1815 they covered only one-sixth.

Grain-crops.—The yield per acre now averages 21 bushels, against 16 in 1835, viz.:—

Year.	Wheat.	Oats.	Barley.	Rye.
1835 . . .	14·7	19·1	15·4	13·7
1894 . . .	19·8	26·4	21·6	17·1

Transport.—The weight of merchandise carried in France on roads, railways, and canals, has multiplied five-fold since 1851, viz.:—

Year.	Millions of Tons carried 10 Miles.			
	Road.	Railway.	Canal.	Total.
1851 . . .	99	22	108	229
1869 . . .	104	391	125	620
1882 . . .	91	677	140	908
1893 . . .	109	766	226	1,101

In the above table canal traffic includes that of 3150 miles of canal and 4850 of navigable rivers. The road traffic is merely that of 24,000 miles of national routes or grand highways, exclusive of 22,000 miles of Departmental and 270,000 of local or by-roads, the traffic on which is unknown. The transport per mile on the above lines in 1893 is shown as follows, in tons carried 10 miles:—

	Million Tons.	Miles of Route.	Tons per Mile.
Railway . . .	766	24,600	31,300
Canal . . .	226	8,000	28,300
Road . . .	109	24,000	4,500
Total . . .	1,101	56,600	19,500

Railways appear to do 70 per cent. of the goods traffic, but it will be seen that the traffic per mile on canals is little inferior.

Wealth.—If the estimates of the best writers be correct the wealth of the French nation appears to double in forty-five years: we have seen that it doubles in the United Kingdom in forty years. The estimates for France include the following:—

Year.	Wealth, Millions £.			Writer.
	Real.	Personal.	Total.	
1853 . . .	3,680	1,320	5,000	Girardin
1861 . . .	4,800	2,200	7,000	Wolowski
1872 . . .	4,000	3,800	7,800	D'Ayen
1881 . . .	4,600	4,040	8,640	Mony
1891 . . .	4,558	4,745	9,303	Official

Real property stands for less now than thirty years ago, personal has more than doubled in the interval. French joint-stock companies paying income-tax represented in 1887 a capital of 1360 millions sterling, of which railways stood for 540 millions £.

Taxes.—The *Diction. Econ.* gives the following:—

Year.	Direct, £.	Indirect, £.	Total, £.
1830 . . .	10,000,000	23,000,000	33,000,000
1869 . . .	13,200,000	53,200,000	66,400,000
1889 . . .	16,300,000	95,400,000	111,700,000

According to Coste the urban population pays 102 shillings, rural only 56, per head, viz.:—

	Rural, £.	Urban, £.	Total, £.
Property tax . . .	12,800,000	6,000,000	18,800,000
Customs and excise . . .	20,100,000	61,900,000	82,000,000
Stamps, &c. . .	13,000,000	28,100,000	41,400,000
Total . . .	45,900,000	96,300,000	142,200,000

Debt.—The *Journal Statistique* gives the national debt thus:—

Year.	Millions £.	Year.	Millions £.
1833	205	1875	938
1869	520	1891	1,219

The funded debt has increased 90 millions sterling in the last ten years, rising from 950 millions in 1885 to 1040 in 1895.

GERMANY

Population.—The number of inhabitants per square mile is as follows :—

Saxony . . .	650	Wurtemberg . . .	275	Prussia . . .	234
Alsace . . .	290	Minor States . . .	270	Bavaria . . .	194

The ratio for all Germany is 248, against 100 in the year 1815.

Agriculture.—The productive and non-productive areas are as follows in acres (000's omitted) :—

	Crops.	Pasture.	Forest.	Waste.	Total.
Prussia . . .	40,200	16,300	20,400	9,200	86,100
Bavaria . . .	8,800	2,600	5,900	1,400	18,700
Other States . . .	16,200	2,800	8,200	1,500	28,700
Germany . . .	<u>65,200</u>	<u>21,700</u>	<u>34,500</u>	<u>12,100</u>	<u>133,500</u>

The value of farm products is shown approximately thus :—

	Tons.	Value, £.		Value, £.
Grain . . .	18,200,000	109,200,000	Wine, fruit, &c. . .	44,700,000
Potatoes . . .	31,800,000	63,600,000	Meat . . .	63,000,000
Roots . . .	22,000,000	16,500,000	Dairy and poultry	73,000,000
Hay . . .	14,000,000	28,000,000	Sundries . . .	19,000,000

This makes up a total of 417 millions sterling, the shares of the various States being shown approximately thus :—

	Value, £ (000's omitted).				
	Prussia.	Bavaria.	Wurtemberg.	Other States.	Germany.
Grain . . .	65,000	12,400	3,500	28,300	109,200
Potatoes . . .	41,800	8,600	2,000	11,200	63,600
Hay . . .	20,400	3,500	1,000	3,100	28,000
Sundries . . .	38,000	8,300	2,400	12,500	61,200
Meat . . .	37,800	9,400	3,000	12,800	63,000
Dairy, &c. . .	55,000	13,800	4,600	18,600	92,000
Total . . .	<u>258,000</u>	<u>56,000</u>	<u>16,500</u>	<u>86,500</u>	<u>417,000</u>

Food-supply.—The production of grain and meat is approximately as follows :—

	Tons.		Lbs. per Inhab.	
	Grain.	Meat.	Grain.	Meat.
Prussia . . .	10,500,000	920,000	720	69
Bavaria . . .	2,500,000	225,000	920	91
Other States . . .	5,200,000	375,000	880	56
Total . . .	18,200,000	1,520,000	820	68

Grain includes all kinds, for men and cattle.

Hardware.—The output of metallic wares was as follows, in millions £ :—

	1850.	1872.	1892.
Iron and steel	11	32	86
Copper, zinc, &c.	7	12	19
Total	18	44	105

Minerals.—Official returns give the production as following, in tons :—

Year.	Coal.	Iron.	Year.	Coal.	Iron.
1860 . . .	12,300,000	530,000	1880 . . .	47,000,000	2,730,000
1870 . . .	28,400,000	1,890,000	1893 . . .	95,500,000	4,990,000

Internal Trade.—The shares corresponding to the various States in 1894 were :—

	Millions £ Sterling.						
	Prussia.	Bavaria.	Saxony.	Wurtemberg.	Small States.	Germany.	
Agriculture . . .	268	58	17	17	67	417	
Manufactures, &c. . .	430	70	79	82	127	738	
Imports . . .	119	28	14	7	35	198	
Total . . .	807	151	110	56	229	1,353	

Savings-banks.—Their progress in Prussia in twenty years was extraordinary, viz. :—

Year.	Depositors.	£ Sterling.
1872	1,706,000	28,900,000
1892	5,773,000	170,300,000

There is a depositor for every family in the kingdom.

RUSSIA

Population.—The three principal cities have trebled population since 1831:—

Year.	St. Petersburg.	Moscow.	Warsaw.	Total.
1831 .	324,000	308,000	151,000	783,000
1891 .	1,035,000	820,000	455,000	2,310,000

Russia has fourteen cities over 100,000 population.

Agriculture.—The area under crops is as follows, in acres:—

	Russia.	Poland.	Total, Acres.	Crop, Value £.
Grain . .	164,200,000	8,600,000	172,800,000	258,000,000
Potatoes . .	5,700,000	2,600,000	8,300,000	21,000,000
Hay . .	46,400,000	2,100,000	48,500,000	45,000,000
Flax and hemp . .	4,700,000	...	4,700,000	14,000,000
Sundries . .	17,000,000	8,700,000	20,700,000	32,000,000
 Total . .	 238,000,000	 17,000,000	 255,000,000	 370,000,000

Cattle.—The live-stock in 1888 was as follows:—

	Horses.	Cows.	Sheep.	Swine.
Russia proper . .	19,600,000	24,600,000	44,500,000	9,200,000
Poland . .	1,200,000	8,000,000	3,800,000	1,500,000
 Total . .	 20,800,000	 27,600,000	 48,300,000	 10,700,000

Land.—The area mortgaged to the Imperial Bank in the years 1886–88 was 8,860,000 acres cultivated, and 4,750,000 forest, &c., the official value of all being £30,400,000, and averaging 65 shillings per cultivated acre, and 8 shillings for forest land. Official value was two-thirds of selling value.

Serfs.—At the close of the eighteenth century the ordinary price was £24 for a man, £12 for a boy, £6 for a girl. At the emancipation of 1861 there were 47,800,000 serfs, of whom 26,000,000 belonged to the Crown: the average number held by each noble was 800.

Manufactures.—The output of factories (exclusive of those of sugar, liquor, and tobacco) was stated officially in 1894 thus:—

	Factories.	Hands.	Output, £.	£ per Hand.
Russia . . .	19,507	983,000	137,700,000	140
Poland . . .	4,172	150,000	23,400,000	156
 Total . . .	 23,679	 1,133,000	 161,100,000	 142.

The above takes no account of small industries which occupy 6,100,000 artisans.

Minerals.—The product of petroleum is shown approximately thus:—

Period.	Millions of Gallons.		Value, £.	£ per Annum.
	Crude.	Refined.		
1863-80 . . .	670	= 185	7,700,000	430,000
1881-89 . . .	4,510	= 1,260	18,000,000	2,000,000
1890-93 . . .	3,920	= 1,100	12,300,000	3,100,000
31 years . . .	9,100	= 2,545	38,000,000	1,230,000

AUSTRIA-HUNGARY

Agriculture.—Neumann Spallart valued the grain-crops at 60 millions sterling in 1850, and 102 millions in 1887. The ordinary yield per acre is as follows, in bushels:—

	Wheat.	Barley.	Oats.	Rye.	All Grain.
Austria . . .	15·8	20·0	22·6	15·6	18·0
Hungary . . .	18·6	20·2	23·5	16·2	20·1

Land Tenure.—The agricultural population is made up thus:—

	Austria.	Hungary.	Total.
Land-owners . . .	1,510,000	890,000	2,400,000
Tenant-farmers . . .	495,000	100,000	595,000
Labourers . . .	6,465,000	3,480,000	9,945,000
Total . . .	8,470,000	4,470,000	12,940,000

Manufactures.—The consumption of fibre has been as follows, in tons:—

Year.	Cotton.	Wool.	Flax, &c.	Total.
1830 . . .	5,000	20,000	40,000	65,000
1860 . . .	45,000	40,000	100,000	185,000
1894 . . .	135,000	55,000	180,000	370,000

An official report in 1888 stated as follows for textiles:—

	Factories.	Operatives.	Spindles.	Power-looms.
Cotton . . .	1,900	96,000	2,350,000	42,000
Wool, &c. . .	3,055	119,000	1,050,000	23,000
Total . . .	4,955	214,000	3,400,000	65,000

Means of Traffic.—These were in 1893 as follows, in English miles:—

	Austria.	Hungary.	Total.
Highroads . . .	69,000	30,000	99,000
Railways . . .	10,360	7,360	17,720
Water-ways . . .	4,150	3,050	7,200
Total . . .	83,510	40,410	123,920

Wealth.—Becher in 1836 estimated that of the whole empire at 1920 millions sterling: wealth has apparently more than doubled in sixty years.

House-property.—The average to each inhabitant is only two-thirds of what it is in Germany: taking the house-tax as a basis, we find the value thus:—

	Millions £.	Population.	£ per Head.
Austria, duchy . . .	198	3,450,000	57
Bohemia . . .	93	5,850,000	16
Galitzia . . .	51	6,610,000	8
Moravia, &c. . .	118	7,990,000	15
Total . . .	460	23,900,000	19

The above is exclusive of Hungary: see page 185.

Provincial Taxes.—In 1892, exclusive of Hungary, they were:—

	Pence per Head.		Pence per Head.
Austria . 1,210,000	82	Galitzia . 1,050,000	38
Bohemia . 1,100,000	46	Moravia, &c. 1,840,000	55

Municipal Taxes.—Vienna £2,100,000, Prague £620,000: the aggregate of forty-seven other cities amounts to £1,900,000: average all round, 33 shillings per head of urban population.

ITALY

Agriculture.—Official estimates compare with mine thus:—

	Official, £.	Mine, £.
Grain	53,400,000	53,400,000
Wine	33,500,000	33,500,000
Fruit and vegetables	9,600,000	15,200,000
Hay . . . . .	...	26,700,000
Meat, dairy, &c.	79,000,000	79,200,000
Total	175,500,000	208,000,000

There are 2,820,000 farms, held as follows :—

Farmed by	Number.	Acres.	Average Acres.
Proprietor . . .	1,265,000	33,000,000	26
Metayer . . .	1,245,000	18,000,000	15
Tenant . . .	310,000	7,300,000	23
Total . . .	<u>2,820,000</u>	<u>58,300,000</u>	<u>21</u>

Manufactures.—The consumption of coal and iron were, in tons :—

	1850.	1870.	1898.
Coal	100,000	1,500,000	8,700,000
Iron	50,000	100,000	200,000

Savings-banks :—

Depositors . . .	170,000	570,000	4,410,000
Deposits, £ . .	2,200,000	14,800,000	77,200,000

Wealth.—Pantaleoni's estimate was as follows, in millions £ :—

Year.	Real.	Personal.	Total.	£ per Inhab.
1876	1,080	710	1,790	63
1886	1,820	870	2,190	71

This indicated an increment of 40 millions sterling per annum, say 30 shillings per inhabitant.

SPAIN

Population.—There are 92 inhabitants per square mile, against 85 in 1860. Density of population varies exceedingly :—

Estremadura . . .	42	Castile . . .	61	Asturias . . .	135
Aragon	50	Biscay . . .	107	Galicia . . .	158

Agriculture.—An official survey in 1860 gave as follows :—

Cultivated.	Acres.	Uncultivated.	Acres.
Grain	28,100,000	Pasture	22,000,000
Vines	8,200,000	Forest	12,000,000
Green crops . . .	18,700,000	Desert	46,000,000
Total	<u>40,000,000</u>	Total	<u>80,000,000</u>

Earnings.—According to the three classes of houses in Spain we may suppose the earnings of the people to be distributed approximately as follows:—

Clasa.	No.	Millions £.	Average £.
Hidalgos	86,600	43	500
Citizens	457,700	110	240
Peasants	8,087,000	110	35
Total	3,631,300	263	72

SWEDEN

Real estate.—Official returns give the following, in millions £ sterling:—

Year.	Lands.	Houses.	Total.
1866	...	...	133
1879	117	51	168
1893	140	96	236

DENMARK

Sound dues.—These dated from 1348, being 1 per cent. on the value of all cargoes passing Elsinore. They were abolished in 1857, Denmark receiving an indemnity of £3,600,000; one-third from Great Britain.

HOLLAND

Agriculture.—The export of butter and cheese rose from 47,000 tons in 1872 to 103,000 in 1893, while the number of milch cows declined from 980,000 to 890,000. Holland imported no Margarine in 1872, but 35,000 tons in 1893.

Commerce.—In 1893 the weight of merchandise imported was 16,400,000 tons, exported 9,600,000 tons; the former averaged £8, the latter £10, per ton in value.

BELGIUM

Value of land.—The assessed land rental in 1890 was £7,500,000, which was probably 25 per cent. under the real

rental, say £10,000,000. The Minister's estimate of value, 300 millions sterling, would be thirty times the latter figure, which was, doubtless, the basis of his estimate. This is equivalent to 36 shillings rent or £55 purchase per acre.

UNITED STATES

Population.—The census returns since 1830 show thus:—

Year.	Population.	Increase.	Ratio.
1830 . . .	12,866,000	...	...
1840 . . .	17,070,000	4,204,000	82·3
1850 . . .	23,192,000	6,122,000	85·8
1860 . . .	31,443,000	8,261,000	85·6
1870 . . .	38,558,000	7,115,000	22·6
1880 . . .	50,156,000	11,598,000	30·1
1890 . . .	62,622,000	12,466,000	24·8
1896 (estimated)	71,180,000	8,558,000	13·7

The diminished rate of increase in 1861–70 was due to the War of Secession: the actual number of men killed was only 470,000, but the disturbance of family ties and return of many foreign settlers to Europe caused a loss of 3,000,000 in population.

Urban and Rural.—The census classifies as urban all towns over 8000 souls, the ratio of which doubled in forty years, viz.:—

Year.	Urban.	Rural.	Total.	Urban.	Rural.	Total.
1850 .	3,330,000	19,862,000	23,192,000	143	857	1,000
1890 .	18,265,000	44,357,000	62,622,000	290	710	1,000

Urban ratio is 528 per thousand in New England, and only 98 per thousand in the Southern States.

Able-bodied.—The number of persons, male and female, between the ages of 15 and 60 in 1890 was:—

States.	Americans.	Foreigners.	Negroes.	Total.
New England .	1,887,000	952,000	21,000	2,860,000
Middle . .	5,755,000	2,396,000	265,000	8,416,000
South . .	6,205,000	836,000	3,125,000	9,666,000
West . .	10,790,000	4,036,000	223,000	15,049,000
Total . .	24,637,000	7,720,000	3,634,000	35,991,000

APPENDIX

Sizes.—The numbers and ratios by last census were:—

	Males.	Females.	Total.	Males.	Females.	Total.
Americans .	23,252,000	22,650,000	45,902,000	506	494	1,000
Foreigners .	5,068,000	4,182,000	9,250,000	548	452	1,000
Negroes .	8,748,000	8,722,000	7,470,000	502	498	1,000
Total .	38,068,000	30,554,000	62,622,000	512	488	1,000

Occupation.—No return on this head has been published since 1880, when the ratios were as follows:—

	Americans.	German.	British.	Irish.	Scandin.	Total.
Agriculture .	495	235	223	142	448	442
Manufactures .	188	356	488	290	218	220
Trade .	96	147	119	142	77	103
Domestics .	231	212	171	426	257	235
Total .	1,000	1,000	1,000	1,000	1,000	1,000

Steam-power.—The latest return of fixed steam-engines was in 1880, since which date manufactures and mining have risen 80 per cent. : hence the table at page 285 supposes the fixed engines to be 80 per cent. over the figure for 1880.

Agriculture.—The following table shows the average for five years, 1891–95:—

	Acres.	Tons.	Bushels per Acre.	Value, Millions \$.	\$ per Acre.
Wheat .	36,400,000	12,250,000	13·5	319	8·78
Maize .	72,700,000	43,400,000	24·0	656	9·02
Oats .	27,000,000	17,600,000	26·1	211	7·82
Barley, &c. .	5,980,000	2,850,000	19·0	49	8·20
Total .	142,080,000	76,100,000	21·4	1,235	8·70

The crops and other products in 1893 were approximately as follows:—

States.	Weight, Tons.				Bushels Grain per Inhab.
	Grain.	Potatoes.	Hay.	Meat.	
N. England	420,000	330,000	5,100,000	88,000	34
Middle .	4,850,000	1,100,000	10,800,000	383,000	12
South .	13,780,000	670,000	8,100,000	1,593,000	27
West .	50,050,000	2,400,000	42,200,000	2,816,000	76
Total .	69,100,000	4,500,000	66,200,000	4,830,000	41

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States.	Value, Millions \$.				Total
	Grain.	Meat.	Hay.	Sundries.	
New England . . .	9	15	57	76	157
Middle . . .	95	54	138	252	539
South . . .	271	252	80	471	1,074
West . . .	668	462	296	706	2,132
Total . . .	1,048	783	571	1,505	3,902

The average value of what was consumed and what was exported in 1893-94 was :—

	Millions \$.		
	Product.	Export.	Home Use.
Grain . . .	1,042	184	858
Meat . . .	785	162	623
Dairy products . . .	418	10	408
Cotton . . .	272	200	72
Poultry . . .	204	...	204
Sundries . . .	1,161	66	1,095
Total . . .	3,882	622	3,260

The value of products at various periods was approximately as follows :—

	Millions \$.					
	1840.	1850.	1860.	1870.	1886.	1893.
Grain . . .	298	465	830	931	1,167	1,043
Cotton . . .	72	86	192	197	257	268
Hay . . .	96	139	158	192	353	571
Potatoes . . .	38	43	48	57	78	109
Tobacco . . .	19	24	19	43	39	39
Vegetables, &c.	76	105	139	173	349	304
Tillage . . .	599	862	1,386	1,593	2,243	2,334
Meat . . .	139	163	326	394	748	785
Dairy . . .	67	82	163	197	380	418
Poultry . . .	34	88	82	96	186	204
Wool . . .	10	16	21	47	77	64
Hides, &c. . .	17	21	41	49	93	98
Total . . .	866	1,182	2,019	2,376	3,727	3,903
Official value . . .	620	998	1,910	2,088	3,727	...

The official valuation for years before 1886 was below the real value, hay and other items having been omitted.

Food-supply.—The production and consumption of grain show thus:—

States.	Product, Million Bushels.	Consumption, Million Bushels.		
		People.	Cattle.	Total
New England	18	51	29	80
Middle	215	154	138	292
South	560	201	542	743
West	2,275	294	1,352	1,646
Union	<u>8,068</u>	<u>700</u>	<u>2,061</u>	<u>2,761</u>

States.	Tons of Meat Produced.			Lbs. per Inhab.
	Beef.	Mutton.	Pork.	
N. England	65,000	7,000	16,000	88,000
Middle	206,000	25,000	102,000	333,000
South	732,000	75,000	786,000	1,593,000
West	1,407,000	263,000	1,146,000	2,816,000
Total	<u>2,410,000</u>	<u>370,000</u>	<u>2,050,000</u>	<u>4,830,000</u>
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Poultry.—The census of 1890 showed 286,000,000 hens, which laid 820,000,000 dozens of eggs, equal to 157 eggs per inhabitant.

Dairy.—The production of milk in 1890 was 5210 millions of gallons, of which 52 per cent. was used to make butter. The output of butter was 454,000 tons, but there is no record of cheese. Dairy products are valued at £87,000,000 sterling per annum.

Farms.—The average area is the same as forty years ago:—

Year.	Farms.	Acres.	Average.
1850	1,449,000	118,000,000	78
1890	4,565,000	358,000,000	78

The census of 1890 gave the following result:—

States.	Farms.	Acres.	Average.
New England	190,000	10,800,000	57
Middle	515,000	36,100,000	70
South	1,786,000	103,500,000	58
West	2,075,000	207,800,000	100
Union	<u>4,565,000</u>	<u>358,200,000</u>	<u>78</u>

In 1890 there were 3,270,000 farms cultivated by the owner, 455,000 by tenants, and 840,000 on the Metayer

system; that is, the landlord taking half or other portion of the crops, as common in France and Italy. Metayer farms were 10 per cent. of the total number in 1890, against 8 per cent. in 1880.

Agricultural Implements.—One hand in the United States produces as much food as four in Europe, due to improved machinery. It was at the Paris Exhibition of 1855 that American implements first excited wonder: the *Moniteur* said—

“Pitt’s American thresher beat everything. In 30 minutes it threshed 21 bushels, the English machine doing 11, the French 7, the Belgian 4, bushels. It did the same amount of work as 75 men working with flails.”

Manufactures.—Census returns show thus:—

Year.	Millions \$.		Operatives, Number.	Per Operative.	
	Output.	Wages.		Wages, \$.	Output, \$.
1850 . . .	1,019	237	958,000	247	1,063
1870 . . .	3,386	620	2,054,000	302	1,648
1890 . . .	9,372	2,283	4,713,000	485	1,994

The output in the several parts of the Union was as follows:—

Year.	New England.	Middle.	South.	West.	Union.
1850 . . .	285	470	96	168	1,019
1870 . . .	802	1,416	225.	943	3,386
1890 . . .	1,498	3,648	706	3,520	9,372

The principal items of manufacture are shown thus:—

	Millions \$.			Hands in 1890.	Product, \$ per Hand.
	1850.	1870.	1890.		
Hardware . . .	124	612	1,102	784,000	1,407
Textiles . . .	186	490	1,305	878,000	1,486
Food . . .	136	406	1,081	229,000	4,700
Lumber . . .	59	202	590	373,000	1,580
Leather . . .	92	271	511	260,000	1,960
Sundries . . .	422	1,405	4,783	2,189,000	2,185
Total . . .	1,019	3,386	9,372	4,713,000	1,994

Hardware includes machinery; textiles include clothing.

APPENDIX

Hardware.—This industry in 1890 showed thus :—

	Output, \$	Operatives.	\$ per Hand.
Pennsylvania . . .	288,000,000	164,000	1,757
Ohio . . .	105,000,000	70,000	1,500
New York . . .	97,000,000	73,000	1,325
Illinois . . .	94,000,000	51,000	1,850
Other States . . .	518,000,000	426,000	1,217
Total . . .	1,102,000,000	784,000	1,407

Minerals.—The production of precious metals in 1892 was, in millions \$:—

	Colorado.	Montana.	California.	Utah.	Various.	Total.
Gold . . .	5	3	12	1	12	33
Silver . . .	21	15	...	7	7	50
Total . . .	26	18	12	8	19	83

The value of all mining products at various dates was, in millions \$:—

	1850.	1870.	1880.	1890.	1894.
Coal . . .	24	99	141	177	186
Iron . . .	15	38	95	151	65
Copper . . .	8	11	31	38	—
Lead . . .	4	8	10	18	10
Petroleum . . .	—	48	24	35	36
Gold . . .	50	50	36	33	40
Silver . . .	—	16	30	53	28
Sundries . . .	14	53	87	143	88
Total . . .	107	320	434	636	491

In 1894 Pennsylvania produced 166 million dollars, or 34 per cent. of total.

Commerce.—The principal items were as follows :—

	Imports, Million \$.			Exports, Million \$.		
	1860.	1880.	1894.	1860.	1880.	1894.
Sugar . . .	29	75	129	Cotton . . .	192	212
Coffee . . .	22	60	90	Grain . . .	22	280
Woollens . . .	38	34	20	Meat . . .	10	110
Iron . . .	18	54	21	Petroleum . . .	—	37
Silks . . .	31	44	25	Tobacco . . .	19	18
Sundries . . .	216	401	370	Sundries . . .	90	180
Total . . .	354	668	655	Total . . .	333	886
						869

New York in 1893 stood for 896 millions, or 52 per cent.

of the total trade, Boston for 165 millions, the other ports being a long way behind.

Railways.—The mileage open in 1892 compared with population and extent thus:—

No. of Miles.	New England.	Middle States.	South.	West.	Union.
Per million pop. .	1,355	1,426	2,290	4,055	2,630
Per million acres. .	157	293	85	80	91

Money.—The amount has risen nearly 50 per cent. in twelve years, showing thus in millions \$:—

	Treasury.		Circulation.		Total.	
	1883.	1895.	1883.	1895.	1883.	1895.
Gold	198	143	345	475	543	618
Silver	145	503	82	123	227	626
U. S. notes . .	76	143	455	794	531	937
Bank-notes . .	8	7	348	207	356	214
Total . . .	427	796	1,280	1,599	1,657	2,895

United States notes include Treasury certificates, amounting in 1895 to 393 millions \$.

Earnings.—These compared with population as follows:—

Year.	Population.	Millions \$.	\$ per Head.
1840	17,070,000	1,464	86
1870	38,558,000	6,326	164
1893	66,820,000	13,968	209

In 1893 the various sections showed approximately thus:—

States.	Population.	Millions \$.	\$ per Head.
New England	4,900,000	1,622	330
Middle	14,800,000	4,310	291
South	19,300,000	1,814	94
West	27,800,000	6,222	224
Union	66,800,000	13,968	209

Wealth.—Census returns show as follows:—

	Millions \$.			\$ per Inhabitant.		
	1860.	1870.	1890.	1860.	1870.	1890.
New England . . .	1,129	3,496	5,223	413	1,005	1,112
Middle	2,256	10,468	17,819	340	1,060	1,260
South	2,691	3,055	9,928	314	270	539
West	1,160	8,964	32,067	208	640	1,262
Union	7,136	25,983	65,037	307	673	1,049

The annual accumulation of wealth between 1850 and 1890 averaged \$28 per inhabitant in New England, \$38 in the Middle States, \$14 in the South, \$49 in the West, and \$35 for the whole Union. In 1850 the value of slaves was included, averaging \$350 each, the number being 3,200,000: this was equal to 1120 millions \$. The value of real estate in 1890 was as follows, in millions \$:—

States.	Lands.	Houses, &c.	Total.	\$ per Inhab.
New England . .	490	2,495	2,985	635
Middle . . .	2,272	8,271	10,543	753
South . . .	2,354	2,470	4,824	263
West . . .	8,163	9,196	17,359	690
Union . . .	<u>18,279</u>	<u>22,432</u>	<u>35,711</u>	<u>571</u>

CANADA

Agriculture.—The cultivated area is as follows in acres (000's omitted):—

	Ontario.	Quebec.	Manitoba.	Acadia, &c.	Total.
Wheat . .	1,430	190	900	200	2,720
Oats . .	1,860	750	330	1,190	4,130
Barley, &c. .	1,750	280	360	510	2,900
All grain . .	<u>5,040</u>	<u>1,220</u>	<u>1,590</u>	<u>1,900</u>	<u>9,750</u>
Hay . .	2,530	2,460	250	970	6,210
Sundries . .	540	1,500	990	910	3,940
Total . .	<u>8,110</u>	<u>5,180</u>	<u>2,830</u>	<u>3,780</u>	<u>19,900</u>

Cattle.—Returns for 1893 gave the numbers as follows (000's omitted):—

	Horses.	Cattle.	Sheep.	Pigs.	Value, £.
Ontario . .	680	2,100	2,020	1,140	22,800,000
Quebec . .	850	970	730	370	10,400,000
Acadia . .	160	620	660	140	6,100,000
N.W. Province	200	540	160	120	5,000,000
Total . .	<u>1,890</u>	<u>4,230</u>	<u>3,570</u>	<u>1,770</u>	<u>44,300,000</u>

If poultry were added the total value would exceed 46 millions.

Shipping.—The first ocean steamer reached Montreal in

1853 : there were 804 arrived in 1893. Port-entries of all Canadian ports in 1893 summed up 9,800,000 tons, of which Montreal stood for 1,580,000, and Quebec 980,000.

House-property.—The assessed value of cities in 1893 was:—

Toronto	32,400,000	Hamilton	5,100,000	Winnipeg	4,400,000
Montreal	23,600,000	St. John's, N.B.	5,100,000	Ottawa	3,800,000
Quebec	7,100,000	Halifax	4,500,000	Vancouver	3,800,000

Wealth.—In 1830 Sir Henry Parnell valued the real estate of Canada at £60,000,000, including cities and all occupied lands, the latter then comprising 27,000,000 acres. The value of real estate is now 375 millions sterling.

AUSTRALIA

Occupations.—The census of 1891 gives occupations for six colonies, but not for South Australia : for this reason 9 per cent. is added in the table at p. 332.

Steam-power.—The census gives steam-power of factories for four colonies, but not for Queensland, Tasmania, and Western Australia : allowing for the latter the total for factories is 105,000 horse-power. In New South Wales factories have 40 per cent. of all fixed power. Assuming this to be true in the other colonies the total steam-power of Australia stands thus:—

	Fixed.	Locomotive.	Steamboat.	Total.	H.p. per 1,000 Pop.
N. S. Wales	75,000	105,000	55,000	235,000	188
Victoria	80,000	100,000	50,000	230,000	194
S. Australia	15,000	50,000	15,000	80,000	230
Tasmania	7,000	15,000	10,000	32,000	200
New Zealand	55,000	50,000	40,000	145,000	210
Queensland	25,000	55,000	10,000	90,000	212
W. Australia	3,000	10,000	...	13,000	160
Total	260,000	885,000	180,000	825,000	190

Wool.—In ten years Australia exported wool worth 200 millions sterling :—

N. S. Wales 90,800,000	Victoria 30,400,000	S. Australia 14,200,000
N. Zealand 35,600,000	Queensland 25,100,000	Tasmania 3,700,000

APPENDIX

Cattle.—The number and value of live-stock, excluding pigs, are:—

	Number (000's omitted).			Value, £ (000's omitted).			
	Horses.	Cattle.	Sheep.	Horses.	Cattle.	Sheep.	Total. ¹
N. S. Wales .	520	2,470	57,000	4,600	11,800	16,000	32,900
Victoria .	480	1,830	18,200	4,500	10,900	4,300	20,100
N. Zealand .	210	960	20,200	2,500	6,000	10,300	19,200
Queensland .	440	7,010	19,600	3,400	23,100	5,700	32,400
S. Australia .	200	420	7,300	1,800	3,100	2,200	7,200
Tasmania .	30	180	1,700	250	1,100	800	2,250
W. Australia .	50	190	2,100	450	900	500	1,850
Total .	1,880	13,060	121,100	17,500	56,900	39,800	115,900

If poultry were added the total value would be 120 millions £.

Earnings.—In the table at page 346 it was necessary to compress four sources of earnings under one column as “Professions,” &c., which are in detail as follows:—

	£ Sterling (000's omitted).				
	Forestry, &c.	Domestic.	Public Service.	Professions.	Total.
N. S. Wales .	1,500	4,500	5,300	6,000	17,300
Victoria .	1,300	4,900	3,400	6,000	15,600
New Zealand .	1,100	1,500	2,300	3,100	8,000
Queensland .	800	1,300	1,700	2,100	5,900
South Australia .	300	900	1,300	1,300	3,800
Tasmania .	300	700	400	600	2,000
W. Australia .	300	300	800	400	1,900
Total . . .	5,600	14,100	14,700	19,500	53,900

Wealth.—Coghlan's estimate in 1890 was as follows, in millions £:—

	N. S. Wales.	Other Colonies.	Total.
Land and houses .	311	510	821
Live-stock .	34	86	120
Sundries .	60	169	229
Total . . .	405	765	1,170

This was equivalent to £291 per inhabitant. The Probate returns of five colonies during twelve years, 1881–92, showed

¹ Including pigs.

500,300 deaths in that period, and the value of property which changed hands by death £152,200,000, say £304 to each death, including infants and paupers.

Debt.—In 1895 the public debt (not including municipal) and the value of State railways showed thus :—

	Debt, £.	Railways, £.	Net Debt, £.	£ per Inhab.
N. S. Wales .	58,200,000	39,000,000	19,200,000	15·0
Victoria .	48,000,000	37,600,000	10,400,000	8·7
New Zealand .	40,000,000	16,000,000	24,000,000	34·0
Queensland .	30,600,000	16,500,000	14,100,000	31·0
S. Australia .	22,300,000	16,000,000	6,300,000	18·0
Tasmania .	8,300,000	4,300,000	4,000,000	25·0
W. Australia .	8,400,000	3,400,000	...	...
Total .	210,800,000	132,800,000	78,000,000	18·5

Meat Exports.—In 1884 Australia exported 31,000 tons of meat, worth £800,000: and in 1894 the quantity was 125,000 tons, value £2,600,000. New Zealand stands for half the total.

ADDENDUM

Official documents just received from Rome show that the manual energy of Italy is 2940 millions of foot-tons daily (1895), instead of 2750, as given at page 189. Also that the number of adults engaged in agriculture is at least 7,800,000, instead of 6,840,000. Moreover the water-power used by factories in 1894 reached 250,000 horse-power, and if this be included the total energy of Italy will be 13,260 millions of foot-tons daily, say 428 foot-tons per inhabitant, instead of 400, as stated at page 189.

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